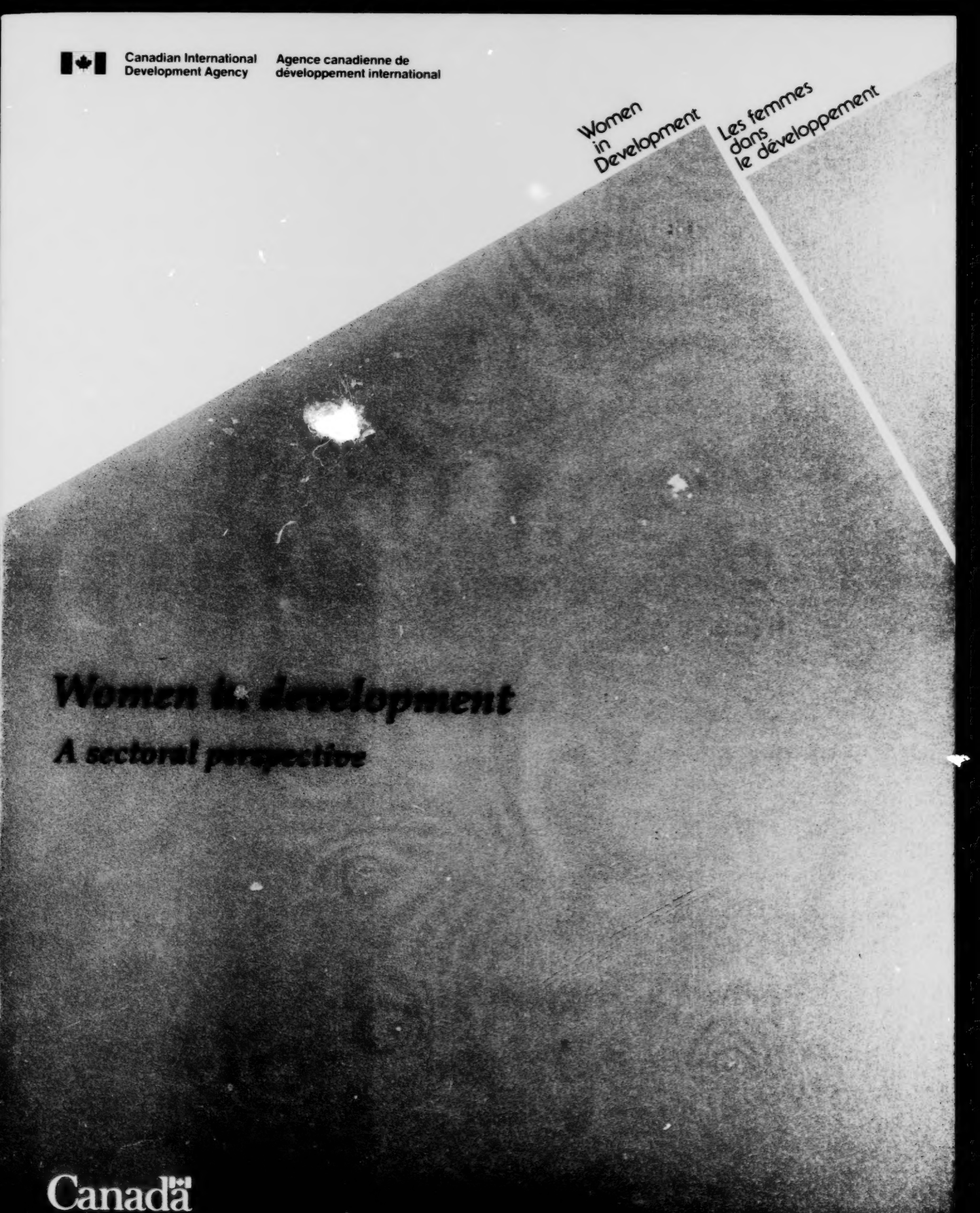
Canadian International Development Agency
Agence canadienne de développement international

Women in Development

Les femmes dans le développement



Women in development

A sectoral perspective

Canada

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A sectoral perspective

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List of Acronyms

ADEM	Association for the Development of Micro-Enterprises
ATRCW	African Training and Research Centre for Women (Ethiopia)
CIDA	Canadian International Development Agency
ECOSOC	Economic and Social Council of the United Nations
FAO	Food and Agricultural Organization of the United Nations
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IRC	International Rice Commission
JUNIC	Joint United Nations Information Committee
OECD	Organization for Economic Cooperation and Development
SIDA	Swedish International Development Authority
UNCHS	United Nations Centre for Human Settlements (Kenya)
UNDP	United Nations Development Programme
UNIFEM	United Nations Fund for Women
UNU	United Nations University (Japan)
USAID	United States Agency for International Development

Introduction

For development programming to be effective, it must involve both women and men. In recognition of this basic principle, the Canadian International Development Agency (CIDA) is implementing a strategy to ensure that women in developing countries are included, both as agents and beneficiaries, in all development programs.

Women in Development: A Sectoral Perspective represents a collective effort by CIDA to bring women's concerns to the attention of programmers within the context of their day-to-day operations. For the use of CIDA planners, project designers, consultants, and Canadian executing agencies, this handbook suggests ways for translating the Women in Development (WID) policy into action by offering guidance on how to plan programs and projects accordingly. The suggestions contained therein should be applied **flexibly and imaginatively**.

This handbook is organized into ten chapters that focus on the most representative sectors of CIDA's programs. Since all sectors are interrelated, readers should not refer only to the chapter dealing with their own sector. Lessons can be learned from the others: for example, improved transportation into a remote area has an immediate effect upon forestry and agriculture; any resulting environmental degradation can lead to changes in water, energy and community health. Likewise, any changes in the daily life of women may have unforeseen implications for other activities.

Finally, although the handbook reflects significant lessons and experiences gained over the past few years, it should be viewed as still evolving. Readers are therefore encouraged to share their experiences with the WID Division and suggest ways for improving the handbook.

Women and agriculture

Agriculture is a key sector in the economy of most developing countries. A review of the role of women in this sector reveals that they make a vital contribution to food production, at the family, national and world levels.

In developing countries, 70 to 90 per cent of women live and work in rural areas. In Africa, women produce 60 to 80 per cent of food. In Asia, women make up 50 per cent of agricultural workers. In Latin America and the Middle East, they also play an important role cultivating the land. In regions where the rate of private ownership is high (Latin America and certain parts of Southeast Asia), women account for up to 40 per cent of the paid work force. In Kenya, 38 per cent of agricultural businesses are headed by women.

The importance of women's involvement in each stage of the agricultural production cycle varies from one ecosystem to another. However, in most cases they are involved in all levels of food production, from soil preparation to consumption.

Although women are the pillars of subsistence farming, their role is not necessarily recognized or supported by government policies or international development agencies. Development efforts have often increased the inequalities between women and men, since developing countries adopt agricultural policies giving priority to cash crops, thereby resulting in serious inequities in the distribution of work, resources and benefits (see Appendix: Development of an irrigated area). Women who are in the paid workforce generally earn less than men.

In Latin America, as in Africa and Asia, technological modernization often goes hand in hand with the registration of land ownership and the creation of cooperatives or other institutional structures. These structures most often work against women by depriving them of access to land, training, technology and credit.

In this context, agricultural development planning must be based on specific knowledge of the involvement of women and men in this sector. Such knowledge must enable planners to foresee participation by women as active agents and beneficiaries in all phases of the project cycle. Agricultural development efforts must promote the recognition and strengthening of the roles and skills of women in this field, yet avoid producing adverse effects on women themselves.

A knowledge of the role of women, an analysis of the constraints and intervention possibilities, and the definition of a strategy for each phase of the project cycle can help improve the standards of living of women and increase the chances of project success.

Current situation of women in the agriculture sector

As producers, women participate in all phases of the food production cycle.

In Egypt, 50 per cent of the women level and work the land and up to 70 per cent are responsible for tilling, planting and harvesting.

Women are responsible for food production and for providing a balanced diet for their families.

One-third of the households in the world are headed by a woman, and in some African countries where male migration is particularly high, close to 40 per cent of all heads of rural families are women producers.

Women's involvement in the production of cash crops is not recognized.

In Gambia, where women provide 84 per cent of the country's total rice harvest and where the dry upland rice paddies of women occupy 26 times more land than the submerged rice paddies cultivated by men, women receive 25 times less of the credit the government allocates to rice production projects.

In some countries, women sell the surplus products of their own fields at markets.

In Africa, women must sell the surplus of their own field at markets in order to obtain the money to buy essential supplies (medication, school supplies, agricultural equipment and staples, such as oil).

Women account for a large percentage of the paid agricultural workforce in many countries.

In India, 50 per cent of part-time workers, agricultural workers and contract workers are women.

Women are becoming increasingly involved as heads of agricultural operations.

In Kenya, 38 per cent of agricultural operations are headed by women. With less credit, less technical support and less training than men, women achieve the same production per hectare as men. When given the same level of assistance, their production exceeds that of men.

Problems respecting the involvement of women in agricultural development programs

Constraints

- Agricultural work done by women has little or no recognized economic value. Their participation is considered as either an unpaid contribution to the family or, when paid, they are underpaid.
- Access to land and other resources is limited in several socio-cultural contexts.
- Access to credit, training and improved production techniques is generally linked to access to land.
- The denial of property rights and the lack of income to pay the fees can prevent women from becoming members of agricultural cooperatives which provide valuable production inputs and commercial opportunities.
- Social and cultural constraints constitute obstacles to women's participation in decision-making and prevent them from freely spending the wages they earn.
- Women are seldom consulted or invited to participate in project planning, implementation or follow-up.
- The development of new technologies has had little effect on women as agricultural producers. The equipment is designed and introduced for men, who are generally responsible for clearing and ploughing the land and benefit increasingly from technology. However, women's tasks, such as weeding and transplanting, are often done by hand with rudimentary tools and require much more time.

> In Gambia, studies reveal that the time spent on agricultural work by women increased from 19 to 20 hours after the introduction of new technologies, whereas the time spent by men fell from 11 to 9 hours.

- In most cases, the active participation of women in the agricultural sector has not been taken into account in the development of agricultural policies and agrarian reforms.

> In a number of African countries, agrarian reform has deprived women of the land they cultivated and to which tradition assured them if not of ownership, at least use.

- The lack of knowledge of the essential role played by women in this sector has led to the development of projects in which women are excluded as participants and beneficiaries, but in which they play a role of unpaid workers.
- The fact that, due to their other obligations, women are not always available is not always considered in the planning of projects.

Possibilities and anticipated effects

Supporting women in agricultural development projects contributes to:

- strengthening their skills in a sector where they already form a majority;
- improving their capacity to manage their agricultural production;
- reducing their heavy workload by promoting technologies suited to their production and processing needs;
- recognizing their role in this sector, which would encourage women in developing countries to form associations and play more significant roles in policy development and project planning;
- assisting rural women to improve their own standard of living and that of their families;
- improving the diet of family members, particularly children.

Strategies for addressing the participation of women in agriculture projects

To ensure that both women and men in the community benefit from agricultural development, the needs of both sexes must be given equal consideration.

A number of concerns and questions must be examined and dealt with at each phase of the project cycle.

Identification

- What is the role of women in each phase of the agricultural production cycle?
- What is the role of women in prosperous and marginal sectors of the economy? How do these roles concern the family and the community?
- Are most women paid agricultural workers or subsistence farmers? What is their role in decision-making?
- What obstacles do women face in performing their daily agricultural tasks and seasonal work?
- Do women face problems obtaining and maintaining access to land or control over the food produced and the income received?
- Are there legal, economic, social or cultural obstacles to the participation of women in agricultural development projects?
- Is there a national policy promoting the involvement of women in agriculture?
- Have there been legislative reforms respecting property rights for women? Is such legislation planned?

Collection of Data

- Does the study or research framework provide for systematic processing of data relating to the role and contribution of women in this sector?
- Do techniques exist for the collection and processing of data in accordance with specific criteria: sex, social status, and the work situation of women in agriculture? If not, are the human and financial resources available to develop these techniques?
- Are there trained women available for collecting, compiling and processing the data?
- Will there be cooperation with national government bodies to involve them in the collection of data or to fill any gaps in data on the situation of women in question?
- Have mechanisms been planned for forwarding the data to the community?

Project development

- Will the expertise and opinion of women from rural areas be called upon in the development of agricultural projects?
- How will the project affect the overall economic situation of local women and their access to and control over resources?
- Will the project result in an increase in the time spent on agriculture-related activities? Given their other obligations, do women have the time to perform these activities?
- Will the site of the project be too far away for women who do not have transportation? Will women be able to afford the cost of transportation, if such exists?
- Where the introduction of new cash crops is anticipated, will women be required to grow them, in addition to food crops? What cash crops could be grown and sold by women? Will the cash crops interfere with the production of food crops required for family health and nutrition?
- Will women's traditional markets be affected if they alter their crop varieties?
- Will the project affect the location of food processing and storage facilities? How will this affect the women in the community?

Selection of technology

- Will the introduction of new techniques displace women from their current positions in the sector? Will it improve their status?
- To what extent will the new technologies be accessible to women?

Access to credit

- Is access to credit required to increase the participation of women in this sector? Do women have equal access to credit? Should specific mechanisms to ensure access to credit be implemented?
- Do current practices and guidelines governing access to regular credit discriminate against women? Do the criteria for receiving credit correspond to the resources of women?
- Do collateral requirements, transaction costs and repayment schedules promote women's access to credit?
- Do traditional savings and credit arrangements exist for women? How can they be strengthened?
- Will women be involved in establishing the terms for credit and the allocation, management and repayment of credit?
- What percentage of the budget for equipment and credit goes to women?

Communications

- Do women have access to information on activities in the agricultural sector? Are the channels used to disseminate this information likely to reach women?
- What information networks exist or should be developed to reach women? How do they plan to reach women in isolated areas?
- Are women well informed of the opportunities for training and access to material and financial resources in this sector?
- Will local women's groups or other organizations be called upon to inform or motivate women in the communities in question?

Training

- Will women receive training in agricultural production, marketing or processing?
- Will women receive information on agricultural production and marketing?
- Will women receive training in the operation and maintenance of equipment?
- Will women receive information on supplies, the network of specialized technical resources and suppliers of equipment and parts?
- Will women receive instruction on legal matters, such as property or company ownership, and on marketing or processing operations?
- Will women have access to the licences required for marketing and/or for operating equipment?
- Will women receive training in applying for credit? Is training in management, administration and accounting techniques necessary and can it be adapted to the knowledge of women?
- Given the socio-cultural context in question, should women be given special training in addition to that designed for the entire community?
- Is the training program compatible with the hours and availability of the women in the country or region?
- Are there recognized specialists in the field of women's training in the country or region?
- Are qualified women available for conducting a training program in the areas of organization, technology and management?
- Do training methods and/or instruments exist in this sector? If not, should they be developed? How?
- Has a specific budget been planned for training activities?

Implementation

- Are the communities involved in the establishment of infrastructures? If so, what will be the role and extent of participation of women?
- In what capacity will women be active participants and beneficiaries?
- Will regional or local women be involved through their work in implementing the project in order to encourage women from the region to participate?
- Will women's work be recognized and paid on an equal basis with that of men?

Operation and maintenance

- What will be the roles of women in the production cycle?
- How will women be involved?
- Have organizational mechanisms been planned for equitable access to and control over material and technical resources by men and women in the community?
- How will women participate in and contribute to the maintenance of equipment? Through what organizations will women be involved?

Management and administration

- What techniques will be used to involve women in the management and administration of the project?
- How will benefits for women be ensured?
- Will women be involved in the control of financial resources?
- Will the management process ensure women control the income?

Follow-up and evaluation

- What follow-up mechanisms will be used to support the participation of women?
- What will be the role of women in follow-up activities?
- What indicators will exist to measure the degree and rate of participation of women in the agricultural production cycle and in each phase of the project?
- What instruments for measuring access and control of material, technical and financial resources will be implemented by women in the project?
- How will women be reached during the evaluation?
- Will women be represented in the management and implementation of the project evaluation?

Resources

Books

I.L.O., Vers la mesure des activités économiques des femmes, Under the direction of Richard Anicer and Catherine Hein, Geneva, 1986, pp. 89-124.

Women, a World Report. A New Internationalist Book, Foreword by Debbie Taylor, Ed. Methuen, London, 1985, pp. 16-29.

Women, Land and Food Production, Women in Development. A Resource Guide for Organization and Action, London, 1983, p. 73.

Journals and Periodicals

Ahmad, Zubeida, "Comment améliorer le sort des femmes de la campagne", Revue internationale du travail, Vol. 119, No. 4, July-August 1980, pp. 455-468.

Bergmann, E., H. Bergmann and J.-J. Schus, "Les femmes et le développement agricole", Revue Tiers Monde, T. XXI, No. 84, Oct.-Nov. 1980, pp. 833-844.

FAO, Idées et Action, Special Issue on Rural Women, No. 150, 1984, 46 p.

Mignot-Lefebvre, Y., "Du côté des planificateurs et experts en développement", Revue Tiers Monde, T. XXIII, No. 91, July-Sept. 1982, pp. 579-586.

Neekes-Vagliani, Winifred, "Elaboration d'un cadre d'analyse pour les projets agro-alimentaires", Revue Tiers Monde, T. XXVI, No. 102, April-June 1985, pp. 307-315.

Roberts, Penelope, "Les femmes et les programmes de développement rural", Revue Tiers Monde, T. XXVI, No. 102, April-June 1985, pp. 300-307.

Traoré, Aminata, "Femmes et auto-suffisance alimentaire: un rôle capital", Agripromo, No. 29, June 1980, pp. 15-20.

Documents

Bouchard, Ginette, Les femmes et l'agriculture, MATCH, Ottawa, 1981, 62 p.

Carloni, Alice, Integrating Women in Agricultural Projects. Case Studies of ten FAO-Assisted Field Projects, FAO, Rome, 1983, 103 p.

CICC, Les femmes et la production alimentaire, Nairobi Workshop Paper, Ottawa, 1986, 31 p.

CIDA, Agriculture and Development. Agriculture Sector Development Issues Paper, 1988, 22 p.

Dumouchel, S. and N. Thède, Femmes, épargne et crédit au Sahel, Projet Solidarité Canada-Sahel, 1986, 114 p.

FAO, Les femmes et la production alimentaire, la manutention des aliments et la nutrition, Report of the United Nations Advisory Group on Proteins and Calories, Rome, 1979.

Rousset, Dominique, Femmes contre la faim, Comité français contre la faim, Paris, 1986, 75 p.

Stratégies prospectives d'action de Naïrobi pour la production de la femme, Conférence mondiale chargée d'examiner et d'évaluer les résultats de la décennie des Nations-Unies pour la femme: Egalité, développement et paix, Naïrobi, July 15-26, 1985.

United Nations, The Key to Development: Women's Social and Economic Role. Part III: Women and Food, JUNIC/NGO Series on Women and Development, Kit number 3/A, Vienna, May 1985.

Articles

Bissiliat, Jeanne, Sauver l'avenir avec les femmes du Tiers Monde, Colloque du Comité français contre la faim: "Bilan de la décennie de la femme: 1975-1985", Paris, April 1986, 12 p.

Herz, Barbara, The World Bank New Approach to Women in Development, Summary, the World Bank, Fb. 1987, 5 p.

APPENDIX

Irrigation project at Bangoukoiré, Niger[1]

Bangoukoiré is located in Niger, some 30 kilometres from Niamey. One thousand two hundred people live in this area on the east bank of the great river. In 1980, a large international development organization irrigated 176 hectares for intensive rice cultivation. Two crops per year were planned, and yields of five to eight tonnes were expected, a considerable improvement over previous years.

Before the projet was carried out, rice was traditionally cultivated by the women. Nearly all the women grew rice, even the oldest (18 per cent of the women were 80 or older). Several of them cultivated as many as five rice paddies, which they had inherited or acquired by other means. In addition to rice, the women grew okra and sesame, using traditional tools such as the daba, which is common throughout Africa. The amount of time they spent growing rice depended on the amount of domestic work. The women's daughters helped in the paddies. The money they earned from selling rice was not just "extra income" for the family, nor was it just used to pay for unexpected expenses such as marriages, gifts for relatives, burials, or to invest in cattle. Sixty-one per cent of the money was used to buy millet, just as 61 per cent of the money that the men working outside the country sent back home was used for the same purpose. Moreover, thanks to the rice the women grew, the people were able to tide themselves over during the hard times when millet was in short supply.

Growing rice gave the women social and economic power that was vital to them, for it created a balance between their role and that of the men. In addition, rice cultivation provided a window to the outside world: to sell their rice, the women went to the city market in Niamey. The irrigation project completely destroyed this balance. Why? Because the irrigated plots of land were allocated to the men, the family heads, not to the women. But the men were busy growing millet and were less familiar with transplanting rice plants and weeding, so they had the women and children - cheap and efficient labor - work in the paddies. One man told the investigators that he had never even set foot in his rice paddy, but had put his wife in charge of it; however, he was the one who received the money twice a year, after the harvest. As a result of the project, the women changed from being independent farmers to unpaid farmworkers. Despite all this, they continued to cultivate rice in their own paddies along the river for family consumption and grow vegetables for market as in the past. Overworked, they had to walk long distances from the village to the irrigated paddies, from the paddies to the river and back to the village again, gathering wood on the way home.

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1 Dominique Rousset, Femmes contre la faim, Comité français contre la faim. 1986, p. 21-22 (translation).

Women and education and training

Education, both formal and informal, is widely regarded as an important aspect of development. Yet, most women in developing countries are unable to take full advantage of educational opportunities.

Two-thirds of illiterates are women, and two-thirds of women over the age of 25 have never been to school. The vast majority never enter secondary school. The consequences of this educational gap between men and women are far-reaching, for women and their families (World Bank, 1984).

Boys continue to receive greater amounts of formal education than girls for the following reasons: cultural attitudes concerning the value of educating girls, particularly when there is a fee; the allegedly poorer marriage prospects for educated girls; the necessity of child labor (particularly female) in the home and in the fields; concern for the safety of older girls who must travel long distances for education; social beliefs that education should be segregated by sex and that girls should be instructed only by female teachers (of which there may be a shortage); and the expectation that boys will support their parents in later life.

The ratio of female to male candidates for technical and higher education is also low in most countries as the result of a number of factors. These include:

- the high rate of female school-leavers at lower educational levels;
- the prevalence of sex-differentiated educational specialization;
- sex biases reflected in curriculum development;
- differences in course offerings open to either sex;
- differences in admission; and
- the explicit or implicit streaming of students.

Entrance qualifications may exclude women who, due to the emphasis on traditional subjects for women, generally have weak backgrounds in science, mathematics, management or business training. Family responsibility, inadequate access to transportation, lack of child-care facilities, and, for single mothers, the necessity to earn an income further reduces the number of qualified female candidates. Again, negative attitudes concerning women's capabilities also eliminate many from the selection process. Even in countries where women generally achieve higher educational levels (such as completion of secondary, technical or university programs), their access to scholarships and other assistance programs remains limited.

Informal and adult education programs are equally important for development, and women face constraints in this area as well. Donor agencies often target men when planning extension or training components of projects. The following examples demonstrate the explicit exclusion of women from training programs financed by international agencies:

In Sri Lanka, the Hotel School of the State Hotels discriminates against women in a burgeoning field of employment by blocking admission of women to the diploma course in management and catering and to cooking courses (authorities maintain that women cannot work in "hot" kitchens). (International Centre for Research on Women, 1980)

African women, who carry out between 70 to 100 per cent of agricultural production and 50 per cent of animal husbandry care, were virtually excluded from informal rural education programs related to these areas.

In Panama, women are still denied access to traditionally masculine activities since Panamanian vocational training experts consider these courses to be exclusive to or peculiar to the male sex, owing to the nature of the work.

There are also a number of assumptions about women's preferences in reference to traditional and non-traditional training programs. Most of those assumptions, when tested, have proven to be incorrect.

Thai women expressed a preference to learn about animal husbandry and crop cultivation, over training in weaving and handicrafts; Jordanian women refused to enroll in specially designed courses in cosmetology, pottery and mother of pearl industry, opting instead for carpentry and dressmaking. The first experiment to set up an Industrial/Trade Training Program for Women in Morocco received more applicants than they could handle (Harfoush, 1980).

Current situation of women in the education and training sector

Educational Attainment of Women by Region

Anglophone Africa

Women's access to basic education and functional literacy has increased greatly during the last 20 years, particularly in Tanzania, but there are still large gaps relative to men. With the exception of Botswana, Lesotho and Swaziland (countries with large male populations), these gaps become even more pronounced at the secondary and post-secondary levels and in training institutes and programs.

Latin America and the Caribbean

In terms of receiving basic education and literacy skills, women in the region, with the exception of Haiti, tend to fare better than women in other parts of the world. However, at the secondary and post-secondary levels and in vocational training, female participation rates drop significantly. This situation has major implications for women and their families due to the increasing number of female-headed households in the region and the increase in the number of poor women being forced to help support their families.[1]

1 While women's share of the world's total labor force increased by 10 per cent between 1950 and 1980, it increased by 23 per cent for the Latin American region.

Asia and the Pacific

A major achievement in the region is that one-third of countries have attained female enrollment ratios of 90 per cent at the primary level. However, in all Asian countries, female illiteracy levels remain higher than those for males. There are dramatic differences between South and Southeast Asia. For example, virtually the entire female population in South Asia is illiterate (e.g., Bangladesh – 88.5 per cent, India – 87 per cent, Pakistan – 82 per cent). The exception is Sri Lanka (34.9 per cent). On the other hand, female illiteracy in the Philippines remains at 22.8 per cent and in Thailand at 31.6 per cent.

At the secondary level, female enrollment drops substantially, except in Southeast Asia where it is almost equal to male enrollment. In all areas, women seem to be under-represented in vocational training institutes and in tertiary education. Where they are represented, they tend to be concentrated in the liberal arts and education sectors.

Francophone Africa

Illiteracy levels are generally very high in Francophone Africa, but girls and women form a disproportionately large sub-group among illiterates. Little data are available on the role of women in education and training in this region as a whole. Donors and governments tend to be responding to women's needs on an ad hoc basis.

Constraints Encountered by Women in the Sector

- Women face attitudinal barriers in education and training programs based on religious, social, cultural and economic considerations. This occurs at the level of policy-makers, development planners and target populations.
- Planners are often not aware of the economic and social benefits of educating women.
- Women's interests are not represented when policy, planning and implementation of projects take place.
- Reinforcement of sex-role stereotyping (i.e., through streaming of courses by sex, content of curricula and textbooks, and a lack of female teacher role models) results in major differences in the education of girls and boys and concentrates women in fields such as home economics and the liberal arts, not necessarily related to job opportunities.
- Recruitment, nomination, and selection criteria tend to exclude or bypass women and girls.
- The time of day, duration and location of programs may conflict with most women's dual responsibilities as income-earners and providers of domestic care to the household.
- Education and training programs offered specifically to women frequently do not reflect the employment opportunities that will be available to them upon completion of their studies and training.
- Employers hire women for low paid jobs.
- Women may have a negative attitude towards education and training, reinforced by the low social status that some cultures attach to women working outside their homes.

Potential Effects of Education and Training Development Projects

Positive

- The education of women has a positive multiplier effect on the rest of the family. Research indicates that the educational attainment of children is more closely related to the education level of their mothers than to that of their fathers.
- Investments in education for women improve family health and reduce fertility.
- Some of the most successful women's literacy or basic education programs and campaigns have been delivered as part of training programs which focus on women's economic or productive roles, on specific employment opportunities or on improving their income-producing capabilities.
- The prestige of receiving an education and/or training award can be a key factor in offsetting social or parental resistance to women's participation in a program (e.g., American-Jordanian Scholarship Program of USAID).
- Joint programs of study abroad for husband-wife teams can offset social resistance and ensure the most efficient use of education and training resources.

Negative

- Education and training programs for women which do not take into account the specific needs and constraints facing women have a high failure rate.
- Without follow-up or reinforcement, many women who attend adult literacy programs become functionally illiterate again.
- Often, education and training are provided to women as an end in itself, without the allocation of sufficient resources to make use of the training (e.g., small business development training for women in a project, but no credit mechanism is available for women to obtain start-up capital).
- Arbitrary pre-conditions set by planners of training programs often exclude many women from the benefits of learning skills that will permit them to survive economically.

Strategies for addressing the involvement of women in education/training programs

Strategies to overcome attitudinal barriers and lack of awareness of the economic and social value of training women can include:

- Policy dialogue between donors, non-governmental organizations (NGOs), and the governments and institutions of developing countries on the economic and social development benefits of training women; this dialogue can include seminars and workshops, and research on women's roles in Human Resource Development planning.
- Development of promotional materials and briefings for women and their families on the benefits of and opportunities arising from women's training.
- Support to developing country women's groups, networks and professional associations which can in turn act as advocates for supporters of women's education and training in key circles.
- Short-term training programs for vocational guidance personnel in vocational and career guidance and placement services to ensure that they are supportive of women's educational needs and are agents of attitudinal change.

Information on Education and Training Opportunities

- The systematic distribution of updated materials on education and training programs targeted to women.
- Special advertising efforts to reach and recruit women.
- Increased use of informal networks and NGOs which reach women.

Recruitment, Selection and Nomination Processes

- Ensuring that the selection process is non-discriminatory and completely open, via press notices, selection criteria, and composition of the selection committees.
- Allocation of a certain number or percentage of training spaces to women in male-dominated sectors.
- Restrictions on the age of entry for women into training must be removed to encourage women to enter and re-enter training and employment at all ages.

Failure of Women to Apply to Technical and Higher Education Programs, Inability to Meet Minimal Requirements

- Incorporation into education programs of more career counselling for females.
- Development of diploma courses for girls and women, linked to job opportunities.
- Up-grading programs for marginally qualified women to prepare them to meet minimal requirements established by training programs.

Education and Training Programs' Content Inappropriate for Women

- Consultations with local women about their training.
- Assessments of local, regional and national employment trends and their relationship to women's training needs.
- Linkage of women's training (including on-the-job training, cooperatives) to job opportunities and revenue-producing initiatives.
- Training in entrepreneurship and business concepts to self-employed women and women in small-scale industries.
- More and better training of women trainers who, in addition, can act as role models.
- Support services such as hostels and child-care in training institutions to facilitate the regular attendance of women.
- Joint programs of study abroad for husband-wife teams.

Women's Basic Education

- Ascertaining the causes of high drop-out rates for women and developing new approaches to counteract this fact.
- Promotional campaigns to encourage women and their families to remain in school or training classes.
- Recruitment of more women trainers, teachers and educators.
- Development and funding of more programs for girls in primary and secondary systems adapted to their immediate needs.

Project checklist

General Situation

- Do girls and women have full access to education/training in the region?
- What specific cultural, social, legal, geographical, financial and time constraints do girls and women face in gaining full access to education and/or training? What is their current participation rate?
- What are the educational/training needs of girls and women in the proposed area?
- Does the education/training received by girls and women differ from that received by boys and men? Is there an emphasis on traditional roles for women, reinforced by teaching personnel and school textbooks?

Planning/Design

- Will women be consulted in the design of new or revised educational/training programs?
- Will the location, time or price of the proposed program positively or negatively affect women's participation in it?
- Will women with family responsibilities be able to fully participate in the proposed program, as a result of convenient location or provision of child care facilities?
- Will women have the necessary time to participate in the proposed program? Can allowances be made to enable women with time constraints to participate?
- Are literacy or formal education requirements for participation in the program essential, or is it possible to structure the programs to allow for illiteracy, functional literacy, experience?
- Will there be enough female instructors to encourage the participation of women and compensate for social and cultural restrictions against women being taught by male instructors?
- Will information concerning the proposed program be made available through women's information networks, and will women be explicitly invited to apply?
- Will women receive the same content and quality of instruction as men in the program?
- Will the training result in marketable skills and/or improve the skills or efficiency of women active in, or entering into, the formal and informal sectors?

Resources

Anderson, Mary B., "Gender Issues in Basic Education and Vocational Training", Washington: USAID, Feb. 1986.

"Barriers and Strategies for Overcoming Barriers to Women's Participation in Training and Scholarship Programs." CIDA: WID Unit, 1986.

Burton, Cynthia, Women in Development Issues in Education and Training. Loubser Consultants Inc. Ottawa, March 1987.

"CIDA Contribution to Literacy and Basic Education for Women in Developing Countries", Vol. I and II, CIDA, Professional Services Branch, Education Sector, Dec. 1985.

Foster, Theodora, "Trends and Key Issues Related to Scholarships and Training for Women in Developing Countries." CIDA/EDPRA Consulting, 1985.

Gorden, Shirley, Non-Formal Education and Training of Women in Development Projects. New York: World Bank, 1982.

International Centre for Research on Women. Bringing Women In: Towards a New Direction in Occupational Skills Training for Women, Washington, D.C. Office for Women in Development, Bureau of Programs and Policy Coordination, Agency for International Development, May 1980, pp. 2-3.

"INSTRAW News (Women and Development)", Various issues. Publication of UN International Research and Training Institute for the Advancement of Women.

La formation des femmes en gestion. Une bibliographie sélective et annotée suivie d'une description de programmes de formation. Claudette Desjardins and Nicole Lamy. Montreal: HEC. August, 1987, 214 p. (Available at CIDA).

Synthesis Report of Branch WID Scholarship and Training Strategies. CIDA, WID Unit, 1987.

"Sex Equity in Elementary Education: Bridging the Gap." North York Board of Education, 1984.

Sivard, Ruth Leger, "Women ... A World Survey." Washington: World Priorities, 1985.

Stromquist, Nelly P., Empowering Women Through Knowledge: Policies and Practices in International Cooperation in Basic Education. New York: UNICEF, July 1986.

White, Karen, et al., Gender Issues in Latin America and The Caribbean. Washington: USAID, May 1986.

"Women's Program Newsletter" (several issues), International Council for Adult Education.

World Bank Annual Report. 1984.

Women and energy

Energy plays an important role in all daily activities. Energy comes from a variety of sources: residues, fuelwood, charcoal, hydropower, fossil fuels, and human labor. An energy shortage lowers the standard of living and affects human activity at every level, from subsistence farming to industrial manufacturing. Due to higher energy prices in the 1980s, and a general overuse of forest and agricultural resources resulting in environmental degradation, countries are developing alternative sources of energy, improving energy management and planning, and instituting fuel conservation measures. Yet, the traditional focus of energy planning in developing countries has not radically shifted from capital-intensive, large-scale energy projects, which benefit the modern industrial sector.

For the most part, large-scale projects in developing countries have not been designed to meet the energy needs of the urban or rural poor. Electricity has remained unavailable or unaffordable to most of the population. The energy requirements of women, who are the major suppliers and consumers of energy, have been overlooked. The extra work burden for women due to energy shortages is generally not adequately addressed in energy development projects.

If new energy strategies are to be successful, rural energy needs must be addressed in the context of integrated approaches to rural development. Questions concerning the allocation of scarce resources such as land and water, and their effects on rural women, need to be examined. Though research on the role of women in the energy sector is not extensive, it is evident that women contribute significantly. The following chapter highlights the importance of their role, constraints to greater participation, and recommendations for involving women in all phases of energy projects.

Current situation of women in the energy sector

Whether in forestry development, charcoal production, household energy, or agricultural mechanization, women are typically ignored, displaced, given low profiles, or burdened with the costs of the project (Devres, 1979, 1980). Yet, the critical role of women in meeting basic family needs, producing food, and generating income – all of which require energy – has been substantiated by the International Labour Association (ILO) and elsewhere (Celselski, 1984). Specifically, women's role in the energy sector can be summarized as follows:

- Women are major energy suppliers: in Africa household fuel collection is generally done by women. Typically, women and children collect fuel near by, while men collect large amounts long distances from home. In areas of scarcity, women spend 10 to 12 hours per week, travelling up to 10 km per day and carrying loads weighing as much as 25 to 35 kg (Celselski, 1985).
- Women are primary users of household energy: in their role as cooks, women are major energy consumers, spending 3-4 hours per day cooking, which is more time than is spent collecting fuel (Celselski, 1985).
- Women are producers in small industries: fuel is often a key input to women's income-generating activities such as food processing, beer brewing, and ceramics. As fuel costs rise, these activities become less viable.
- Women are energy experts: women in developing countries have considerable practice in energy use and conservation which is often ignored by scientists and technologists.
- Women are energy planners: women have considerable experience which should be used in plans for energy pricing, distribution and technology acquisition (Davenport, 1985).

Constraints to Women's Participation

The same obstacles confront poor people in meeting energy needs as in meeting all other needs: lack of resources and information, administrative, legal, social, political, and class barriers. Women face problems of:

- lack of control over energy producing resources;
- limited access to land and credit;
- time constraints;
- illiteracy;
- lack of mobility;
- lack of information;
- opposition of men when their traditional rights are threatened.

Women are constrained from participating in and benefiting from energy projects because of the projects' design. Such constraints include:

- The central role of women and the needs of the household have been overlooked in favor of large-scale, capital-intensive projects.
- Women are given low profile positions in wood fuel projects, are less well served by extension agents, and their concerns about species and tree product usage are often ignored.
- Technologies are inappropriate and costly.
- Technologies are often introduced to men even though the women will be the users. In the Sahel, for example, a solar technician demonstrated solar water pumps to male village leaders, claiming women would never understand the demonstrations, forgetting that women would be the ones using the pumps.
- In some projects, the technology was introduced to women but quickly co-opted by men for a different use. Women have been given carts to haul wood and water, but men have taken them for other uses (Hoskins, 1985).

Potential Negative Effects of Energy Development Projects

Electrification

Rural electrification is expected to produce electricity, increase agricultural production, promote rural industrialization, create jobs, improve incomes, and reduce migration. According to the ILO, these expectations are often idealistic. A wide range of problems can result.

Structural changes in the agricultural workforce can lead to men replacing women (ILO, 1983). This can be positive if it relieves women's workload, but often it removes them from income-generating activities. In Asia, the growth of mechanized rice mills has left many poor women, who formerly hand-processed rice, destitute. Men operate the mills (Women in Development, 1982).

Shifts to electrical pumping devices may actually reduce the number employed in irrigation activities while offering no other employment alternatives.

It is often assumed in rural electrification projects that the household is a homogeneous unit and that household lighting is an unmitigated benefit, ignoring the different effects on men and women. In fact, it may be a curse for women household workers who find their work hours extended without earning additional benefits (Hayes, 1984).

In large-scale hydro projects, women may find their households displaced without consultation or access to compensation. Flooded areas decrease the availability of fuelwood, of fodder and agricultural land, forcing women to find alternative sources farther away.

In Himachal Pradesh, India, a valley was flooded for a major hydropower project to provide electricity for Delhi. Villages were forced to resettle, forests were cleared for agricultural land and watershed areas were closed to free wood-gathering. Since the project did not consider local needs, women, who previously had an adequate supply of fuelwood, must now rely on dung and crop wastes for fuel, increasing their workloads and reducing agricultural production (Celselski, 1985).

Improved Stoves

Many stove projects do not meet local needs due to unexpected social problems and technical limitations. Technical difficulties, which often do not surface during laboratory testing, involve stoves that are not suited for cooking local food, do not fit locally available cooking pots, are not sturdy enough, or do not actually save fuel. Many stoves also have unforeseen adverse effects on women's traditional allocation of work and time. For example, women may need:

- to cook and serve meals in daylight because there is no longer firelight;
- to chop wood differently or use small wood of a specific diameter which may be scarce near the village;
- to use more wood with a new stove even though cooking time is less;
- to have help in maintaining flues and stove surfaces.

Cost appears to be a relatively less important consideration than many project implementors had imagined and stove aesthetics relatively more important (Hoskins, 1985). Sometimes, new stoves encourage women to cook different dishes which may affect nutrition.

Biogas

Biogas is often regarded as a good substitute for woodfuel, but the technology is often unaffordable and increases the value of resources that were at one time affordable. In regions where dung is used as a cooking fuel, the introduction of biogas technology reduces the available supply of dung for women who do not have their own cattle and live in households which cannot afford this new expensive technology (Hoskins, 1985).

In Nepal, two problems associated with a biogas-fueled milling plant were inadequate supply of manure and limited demand for milling services. Even though women provide 90 per cent of the labor for feeding manure into the digester, and are responsible for grinding grains, they have no voice in the plant's management. Women cannot afford the plant's costly milling fees and are reluctant to give manure to the plant as they need it for their own use.

Strategies for addressing the involvement of women in planning energy projects

In the numerous sustainable energy projects that have been planned and implemented, women have rarely been involved in the project process from start to finish. Yet, women are a significant factor in the success of these projects and without their involvement the potential for failure is much greater. The scarcity of data on women and energy makes project planning, implementation and monitoring difficult. Providing women's organizations with an active role in energy planning is one means of identifying areas for women's involvement. The following are the types of strategies that should be followed for increasing benefits to rural women:

- Provide more resources to the rural sector in general and specifically to meeting household biomass energy needs.
- Involve rural women, as principal suppliers and users of household energy, in the planning, development and implementation of new energy technologies and strategies to ensure they reflect women's requirements.
- Develop country-specific solutions based on women's priorities.

Information Base

Lack of detailed gender-specific information is often cited as a reason for not involving women in all phases of the development project process. Recently, more micro-level studies have been undertaken, but in general it is still difficult to gain a clear picture of where, when, under what conditions and to what extent women are engaged in various energy-related activities. Thus, it is important that socio-economic data relating directly to specific project objectives and activities are collected. Such information will indicate the current role of women in a particular geographical area in the sector, highlight areas for potential project intervention, and provide a basis on which a project success or failure to involve women can be analyzed. Considerations which should be addressed include:

Data Collection Considerations

- Are data collected and analyzed with sufficient frequency and timeliness so that necessary adjustments can be made during the course of the project?
- Are women involved in determining data requirements, collecting and interpreting data?
- Are data analyzed to provide guidance for other energy projects?

General Considerations

- What are the traditional tasks undertaken by the target population (women, men and children) in areas relevant to the project objectives?
- What is the division of time and labor, by gender and age, to accomplish these tasks? How do women and men collaborate in carrying out these tasks? What proportion of women's time is spent on tasks related to the energy sector?
- Are there legal, economic, social or cultural constraints to women's participation in the energy sector? Will these constraints limit the distribution of intended benefits to women?

Energy-Related Considerations

- What is the principal source of energy in the target population, and what is the role of women in its supply? How will the project affect this role?
- What are the principal uses of energy in the target group, and will increased or alternative sources of energy change its usage? Will this affect women? What are the relative costs of this substitution in general, and to women in particular?
- Overall, what is the relative need for alternative energy sources in relation to other basic needs?
- Is access to land a factor in energy consumption or production, and do women have adequate access to land?

A socio-environmental study was carried out as part of a CIDA-sponsored transmission line project in Mali. The study specifically examined the potential effects of the project on women in terms of population displacement and environmental degradation (CIDA Project, 1982).

A USAID desk review found that pre-project baseline studies on women's actual patterns of fuel use and preferences led to better project design (USAID Policy Paper, 1982).

Participation of Women in Project Planning

The need for people's participation in planning and implementing energy programs has been recognized, yet women are still generally considered only as beneficiaries. Scientists design technologies without consulting women, neglecting their specific needs and ignoring their knowledge in the field. Women are producers, suppliers, and consumers of energy and these roles should be addressed by project planners. The following issues need to be addressed when designing strategies for the consultation and participation of women:

- Will local women from various socio-economic backgrounds actively participate in project planning and design?
- Will women be consulted and their knowledge used in the design of new or improved energy-related technology?
- Have the project planners clearly stated that women will be involved as agents and beneficiaries in the project? Is this intent specified throughout the project planning documents?
- Will the location or price of a proposed energy source positively or negatively affect women's access to it?
- Will an increase in electricity lead to an increase in the use of electrical machinery? Will this machinery be operated only by men? Will women be displaced?
- Will special measures be taken to overcome constraints that prevent women from benefiting from the project?

In energy programs in Guatemala, appropriate stove models have been designed which are based on needs assessments that involved women in all stages of the process. Evaluations show that, for Guatemala, the "Lorena model" is still the most acceptable model available. However, in some other countries, the stove was not accepted as it was introduced without proper needs assessment and did not fit local conditions (Celselski, 1986).

Access to and Control Over Resources

The design of energy projects must take into account women's access to and control over resources in terms of:

- The effects of fuel scarcity on women's workload: The choice of fuel, stoves, and cooking utensils depends on other income-generating opportunities, as well as the relative price in terms of cash and time. Since women often have few income-earning alternatives, their time in fuel collection or cooking may not be seen as warranting cash investments by men who control family spending.
- Fuel scarcity and basic needs: Increased fuel scarcity often forces women to cook less, reducing the number of hot meals, undercooking foods, reheating leftovers, or changing the family's diet. Cash spent on fuel puts additional pressure on women's household budgets and reduces food expenditures and consumption, negatively affecting family nutrition.
- The environment and women's income: Environmental deterioration affects food production in terms of declining agricultural and minor forest products yields. Decreases in yields influence a woman's ability to provide food for her family and forces changes in cropping patterns, sexual division of labor and leads to migration to the cities. Deforestation also affects women's ability to participate in other income-generating activities which require fuel, fodder or fiber. (Tinker, 1982).

The following questions should be addressed when considering women's control over resources:

- Who has access to and control over key energy-related resources: equipment, means of transport, stoves, ovens and dryers, sources of energy such as charcoal, fuelwood, crop residues, and dung?
- Who controls the cash in the family and do women have access to credit? Is credit necessary for female participation in the sector?
- Do collateral requirements, transaction costs and repayment schedules exclude women from access to formal credit?
- Do women have access to technical training and extension services?

Selection of Technology

Program evaluations show that a majority of "Appropriate Technology" projects have failed to reach women in a meaningful way. Hoskins defines success as not only adoption of the introduced technology by the intended women, but "its continued use including unassisted spread" (Hoskins, 1985). For example, male technicians design laboratory efficient stoves, then solicit women's involvement to demonstrate and persuade other women to use them, failing to consider women's needs, financial resources, and level of technical sophistication. What is needed is a strategy that allows for the transfer of technology, including know-how and technique, in a manner that enables the recipient to become a technologist (Overholt, 1984). Thus, women will not only operate the stove or piece of machinery, but also maintain it, ensuring its long-term use.

The introduction of new equipment or technology should consider the following:

- Will the new technology be appropriate for women? Are there any potential negative effects in the proposed technology?
- Will there be sessions designed specifically to train women without affecting other household needs?

Project Implementation

It is possible to adapt development projects to women without designing a women-only project, earmarking a portion of the budget exclusively to women or having a women's component. One way to accomplish this is to adjust the focus of project activities so that location, timing and support services are responsive to the needs of the women in the project area. Experiences from USAID projects have shown that focusing on women's activities solely is no guarantee that women will directly participate (Carloni, 1987). If the focus is on an economic activity rather than a domestic activity, the involvement of women is not automatically assured and special efforts are needed to ensure their participation.

The following table indicates what specific activities might be undertaken for various types of energy projects:

Activity	Action
Forestry/Agroforestry	– acquisition of marginal land and wastelands for women's use; – training in nursery management; – training in crop/tree planting combinations; – training of women extension agents; – organization of activities so they do not conflict with agriculture.
Charcoal Production	– training in production techniques; – formation of cooperatives; – improving women's marketing skills; – facilitating women's access to markets.
Improved Stoves	– involving women in the design; – securing women's access to credit; – training in stove construction and maintenance, marketing and distribution.
Electrification	– evaluating resettlement involving both women and men; – improving access to credit for the installation process; – training and hiring of women to fill professional positions.
Solar	– providing technical assistance, training and credit services; – purchasing equipment.
Biogas	– organizing women's cooperatives; – facilitating women's access to business associations; – training in business and financial management.

In order to make certain that the project is reaching the right people, internal reporting should be conducted during project implementation. Such feedback should indicate the relative proportion of project resources that are going to men and women, and to each socio-economic group.

Training and Extension

The ability of extension programs to reach project participants greatly affects the success of any project. Projects should attempt to make use of existing village extension workers and try to recruit additional staff to reach women at all levels; village, district, regional, etc.. It is important to keep the following in mind when considering training needs:

- Will women be trained in the actual construction, operation and/or long-term maintenance of the energy system?
- Will women be informed of the supplies required and the names of suppliers of parts and equipment?
- Will women have adequate access to licenses necessary for the use of energy sources and/or the operation of energy-related equipment?
- Will women be actively recruited and trained as extension agents to disseminate the above types of information? Have male extension workers been trained in extending technical information to women?
- Will project management actively recruit women as graduates and trainees for professional and semi-professional positions, and as trainers for staff training?
- Will project personnel be accountable for the participation of women in the project, in extension services and in training programs?
- Will women be consulted as to the types of training they need in any part of the energy sector?
- Will training courses be scheduled so that women will not have to travel? Is the timing appropriate for women's other activities?
- Will the project ensure that a significant percentage of scholarships go to female applicants?
- Will professionals within the implementing organization participate in a course or seminar to provide them with better insight in responding to the needs of women?
- Is women's access to communication and information about energy sufficient?
- Have women's groups been trained to assist with information, motivation and the organization of project activities?

The experience of the USAID Arid and Semi-Arid Lands project in Kitui District, Kenya illustrates how extension programs targeted specifically towards women can substantially improve the participation of women and improve technology transfer (USAID, 1982).

Project Monitoring and Evaluation

The effects of the project will be easier to monitor and evaluate if:

- WID objectives have been clearly stated at the beginning of the project.
- Specific activities have been designed to implement those objectives.
- Targets have been established to measure progress.
- Methods have been identified to quantify the success of the project with respect to the WID objectives.

In evaluating any project in terms of its involvement of women, it is important to consider what women have lost as well as what they have gained. Socio-economic or baseline data must be used to examine these kinds of trade-offs. The following types of issues should be examined when evaluating energy projects and women:

- Were women singled out as specific target groups and were female heads of households given specific mention? Why or why not?
- Have women gained or lost with respect to: land ownership or access to land in their own right; direct opportunities for cash income; assistance from other household members; control over the sale of produce? Has their access to important resources changed in absolute terms as a result of the project?
- Were the basic needs of the family affected? What sources of food have expanded or diminished, and what has been the effect on diet?
- What are the distributional effects of the project across different categories of persons, both within and outside the targeted population? Has there been a decrease in income equalities?
- Did women play a role in planning the project? Were women's experiences and opinions actually incorporated into the project?
- How many women relative to men have received training and extension advice directly?
- Has there been a reallocation of women's workload or time? If yes, have the changes been positive or negative?

Cross-sectoral issue

The energy crisis that women face will not be solved by relying on a single technology such as improved stoves, or only on improved supplies of biomass. Rather, energy, in relation to the environment, health, nutrition, women's work burden, and income generation requires an integrated or cross-sectoral approach.

Income Generation

Energy can support employment:

- Improved energy supply can increase time available for income-earning employment.
- Increased agricultural productivity can lead to higher incomes, as a result of more fodder and natural fertilizer, and improved draft power and farming equipment.
- Supplying more fuel leads to greater non-farm, income-generating opportunities for rural industry.

Key elements to consider when designing income-generating projects may include:

- Projects should consider women's traditional activities and women's assessment of their needs.
- Women's energy problems will not necessarily be solved by energy projects (Celselski, 1985).
- Income-generating projects often require an outside catalyst which can provide support and key inputs on a continuing basis.

Environment

The strong linkage between poverty and environmental degradation has promoted the protection of natural resources. A major traditional role of women has been in the area of maintenance and conservation. The failure to build on this traditional role has led to consequences ranging beyond the energy sector. Degradation of forests, watersheds, and agricultural land not only increases the energy burden for women, but leads to a decline in the general standard of living.

The relationship between benefits and conservation of natural resources, as perceived by women, is illustrated by the USAID Arid and Semi-Arid Lands Project in Kenya. When the government cancelled plans for payment to project participants for construction of terraces, dams, and catchments, it was thought that labor would not be available to complete the project. Village women were willing to provide unpaid labor because they realized that these measures would increase crop production and decrease the distance for hauling water (Carloni, 1987).

Health

Problems with health often affect the performance or output of individuals. Well-planned energy projects have the potential to substantially improve the health of women and children. For example, chimneys on stoves may keep women from suffering eye and respiratory infections caused by constant smoke. Adequate supplies of fuel enable women to cook nutritious dishes, provide basic sanitation and heat.

Resources

Carloni, Alice Stewart. Women in Development: A.I.D.'s Experience, 1973-1985. Vol. 1 Synthesis Paper. 1987.

Celselski, Elizabeth. The Rural Energy Crisis, Women's Work and Basic Needs. International Labor Office, Geneva. 1985.

Celselski, Elizabeth. The Rural Energy Crisis, Women's Work and Family Welfare: Perspectives and Approaches to Action. World Employment Programme Research Working Paper. 1984.

Davenport, Alice A. "Involvement of Women Crucial in Energy Planning". ECOFORUM, Vol. 10, No. 2, April 1985.

Devres Inc. "The Socio-Economic and Environmental Context of Fuelwood Use in Rural Communities: Issues and Guidelines of Community Fuelwood Programmes", Report to USAID, Washington, D.C. 1980.

Hayes, Peter. Socio-Political Issues in Rural Community Development - A Programming Guide. Washington, D.C. 1979.

Hoskins, Marilyn and Fred R. Weber. "Why Appropriate Technology Projects for Women Fail" ECOFORUM, Vol. 10, No. 2, April 1985.

Ligne de transmission, Bamako Segou, Étude socio-environnementale, Projet du Mali. CIDA, Hull, Québec. 1982.

Overholt, Catherine, editor. Gender Roles in Development Projects. Kumariann Press, West Hartford, Connecticut. 1985.

"Women in Development", USAID Policy Paper, Washington, D.C. 1982.

Women and fisheries

Women's role in the fisheries sector has received little study. Considering that women comprise 30 to 50 per cent of the total fisheries workforce in West Africa, Southeast Asia and most of the islands of the Pacific and Caribbean, it is evident that there is a serious need for research on this subject. Key areas for study include:

- the roles of women in industrial, intermediate and small-scale fisheries;
- aquaculture; and
- the representation of women in technical occupations.

Women perform a vital role within the sector, at the small-scale level, and as the major processors and marketers of fish and fish by-products in many areas of the developing world. The following pages present an overview of the findings and recommendations that seem most relevant to development work in the sector.

Current situation of women in the fisheries sector

Women are far from invisible in the fisheries sector.

In Bangladesh, Indonesia, the Philippines and Thailand, women are heavily involved in post-harvest activities, contributing 50-75 per cent of all the handling, processing, marketing and distribution of the fish catch (Houriham, 1986).

In Fiji, women earn as much as 90 per cent of the family income derived from fishing activities.

In Senegal, a fisherman traditionally fished alone and then turned his catch over to his wife or a female relative to sell and/or to process. With the recent expansion of the small-scale sector, the fisherman now sells to a buyer who, in turn, sells to a fish mammy - a woman who processes the fish and sells to consumers (ATRCW, 1984).

In Nepal, 50 per cent of the undergraduates in the fisheries program at the national university are female (Houriham, 1986).

In Ghana, fish processing is done by women, the fish mammies, who use antiquated methods and equipment (ATRCW, 1984).

In Chimbote, a port on Peru's Pacific Coast, the fishing industry produces 150,000 tonnes of fish a year. About 8,000 people, mostly women, work in the canneries for about $1 a day. Women work in cold factories and stand in ankle-deep icy water (MATCH).

Constraints Encountered by Women in the Sector

- Women are often not counted in employment figures regardless of the real allocation of their time in various sorts of fishing activities. Women often identify housework as their occupation during census surveys.
- In some countries, fisherwomen receive very little first-hand information. Information usually reaches them through their husbands.
- Many small-scale fisherwomen are constrained by their use of primitive methods of catching and processing fish.
- Few women are directly involved in aquaculture programs due to constraints on their time and the lack of access to technical expertise. Often, training in aquaculture is oriented towards men.
- In the more technically complex areas of fishing, such as intermediate and industrial fishing, men remain the predominant workers and beneficiaries. Many analysts and planners continue to focus on upgrading the efficiency of fish production in these areas, neglecting the equally important processing function (primarily done by women) that follows.
- In many countries, major industrial development projects use women as inexpensive labor on processing lines. Plant management and technology remain male prerogatives.

Potential Negative Effects of Fisheries Development Projects

The failure to address socio-economic issues has been identified as the most important factor contributing to the negative effects of projects intended to improve local conditions (Houriham, 1986).

In Tamil areas of India, fisherwomen had a substantial economic role in their community. This role was negatively affected by the introduction of the machine-made nets in the following ways:

- local males received a disproportionately large share of the training in the use of the machines, which deprived women of their traditional activity as net-makers and net repairers; and,
- the new nylon nets resulted in catches too large to be handled by the women; local women prawn traders were replaced by urban male prawn traders, with refrigerated vans.

In Fiji, new fishing technology was almost exclusively directed at men in the village by government and expatriate personnel, in spite of women's traditional involvement in all forms of fishing.

Strategies for addressing the involvement of women in planning fishery projects

Consultation and Participation of Women

A strategy for women's consultation and participation must be an integral part of developing a fisheries project. Women are more than beneficiaries of development work in their communities. They should be contributors and actors in local decision-making, starting with the adaptation of projects to local circumstances and needs.

The following issues should be addressed by project planners in reference to the consultation and participation of women throughout the various stages of a fisheries project:

- Are local women and women from various socio-economic backgrounds consulted and actively involved in the planning and design of the project?
- Are local women being appointed to the project committee(s)?
- Have the project planners clearly stated the intention to involve women as agents and as beneficiaries? Are these intentions translated in operational terms through the project planning documents?
- Will the project prepare local groups, business organizations, and financial institutions so that they will be willing to accept the active participation of women in the project sector?
- What special measures have been taken to overcome constraints that prevent women from participating in this sector?

Data Collection

The purpose of gathering and analyzing information is to identify the roles that women are already playing in the sector, as well as the constraints that prevent them from enjoying the benefits of development work. The socio-economic information to be gathered should relate directly to the objectives and activities of the intended project. This data can then be used to monitor progress during project implementation.

General situation

- What traditional tasks, undertaken by the local people (women and men), are relevant to the project objectives?
- What is the division of time and labor, by gender and age, to accomplish these tasks? In which ways do men collaborate with women? How does the share of women's work in fisheries compare with the rest of their workload?
- Are there legal, economic, social or cultural constraints to women's participation in the sector? How could these constraints affect the distribution of the project's intended benefits?

Fish production

- What is the role of women in fishery production?
- Do women catch fry? Do they collect molluscs?
- Do women participate in aquaculture activities?
- Do women make and repair fishing nets, traps, and fishing boats?

Fish processing

- Do women carry out any fish processing activity?
- What are the techniques used? Could they be improved?
- What equipment do they need to decrease post-harvest losses?
- Do women have access to credit for fish processing facilities?

Fish marketing

- Are women in charge of the marketing of fishery products?
- What type of equipment do they need to work more efficiently?
- How do women transport the fish to markets?
- Do women have access to credit for use in marketing fish?

Access to and control over resources

- How do women compare to men in terms of access to and control over sectoral resources? Who owns the means of production, e.g. boats, nets, traps, ovens, means of transport, etc.?
- Who controls the cash of the family? Who benefits from training opportunities? Extension services?
- Are women given access to organizations, institutions and services in the sector?
- Do women have access to credit services and training opportunities in the sector?

Communication Support (Information and Motivation)

Research undertaken by the Asian Development Bank indicates that women virtually never receive first-hand information about the details of projects, especially in reference to important areas such as sub-loan terms, collateral requirements, repayment schedules, and interest rates. The bank researcher emphasizes that women are not even informed about time and labor requirements for participation in the project (Houriham, 1986). Among the recommendations made to solve some of these problems are:

- Teams preparing feasibility studies should consult with potential female project participants with regard to the financial and potential time/labor aspects of the proposed project.
- Mechanisms should be devised to inform and motivate women directly and clearly so that they understand the contents of the project, the roles that they will or might have to play.

A well-designed communication support system for the project should be able to answer the following questions:

- Will women, from various socio-economic backgrounds, receive adequate information concerning project benefits, new services, and training opportunities to be generated by the project?
- What mechanisms will be developed to ensure women receive information concerning the project?

Assessment and Selection of Technology

The choice of technology should be appropriate to women's needs, financial resources and level of know-how. Failure to understand the capacity of local women to absorb and assimilate different methods of work may lead to inappropriate choices of technology.

The selection of new equipment and technology should take into account the following:

- Will the new technology be appropriate for women? Are there any potential negative effects of the proposed technology on women? How does the project intend to counteract these effects?
- Will women be trained in the new skills and technologies?
- Will women be able to afford the cost of the new technology? Will women have access to credit opportunities to purchase equipment?
- Will there be significant increase in women's income or share of resources as a result of new technology in their community? Will there be a loss?
- Will the new technology displace women from their traditional sources of work? How does the project intend to deal with this negative effect?
- What type of equipment do women have? What tools do they need to improve efficiency and ease their workload?

Project Implementation

Project Activities

The level of participation and involvement of women in the sector varies by country, region, ethnic group, class, culture, etc. The following areas have been identified, however, as the activities carried out most often by women: net-making/repairing, basket-making, fish processing, marketing, feeding, tending fish ponds and nurseries and fry-gathering.

A number of recommendations have been made to improve the work conditions and efficiency of women in these activities. Some recommendations are:

Activity	Action
Net-making/Repairing Basket-making	– formation of cooperatives; – purchase of machinery; – credit.
Fish Processing	– introduction of new technologies in drying, salting, fermenting, and canning fish; – upgrading the facilities and working conditions; – strengthening management techniques and marketing skills; – increasing the wages of women working in fish processing factories; – providing credit to women entrepreneurs.
Fish Marketing	– training in business and financial management; – training in preservation techniques; – providing storage facilities and means of transportation; – facilitating women's access to markets and business associations; – improving women's marketing skills (women need to acquire skills to negotiate with or bypass the wholesale middlemen); – securing women's access to credit.
Fish Feed	– establishing small businesses that specialize in preparing feeds (using machines).
Fish Ponds and	– organizing women's nurseries and cooperatives; fry-gathering – providing technical assistance and credit services.

Remedial actions to improve the working conditions and production of women in the sector need to be considered in the context of each project. The project planners should be able to answer the following questions:

- Does the project improve the traditional position of women in fish production, processing, and marketing?
- Does the project create new forms of production, processing and marketing in conflict with the traditional practices of local women? Are women excluded as agents and beneficiaries of the project? How can this negative effect be prevented?
- Does the project increase the workload of women in the production, processing and marketing of fish? Will they need to travel longer?
- Does the project change the ownership of means of production, such as fishing boats, smoking ovens, nets, traps, or transport?
- Does the project widen the gaps (knowledge and wealth) between classes, sexes, ethnic groups and/or urban and rural areas?

Extension Services and Training Programs

As stated earlier, despite the extensive involvement of women in fish production, women seem to have benefited very little from fisheries extension and training programs. To counteract this constraint, the following actions could be taken:

- Actively recruit and deploy female fisheries extension agents.
- Schedule training courses during times when home and farm labor requirements are at their lowest.
- Make a concerted effort to recruit female trainees for professional and semi-professional staff training programs.
- Use female graduates in the fisheries programs of local universities as trainees.
- Make project personnel accountable for the participation of women in extension services and training programs.
- Consult women about the kinds of education and training they need in any or all parts of the fisheries system.
- Let women plan their own training schedules, so that such activities will not interfere with their other duties.
- Ensure women will benefit from the project's extension services. Have female staff been hired to provide some of these services? Have the male extension agents received training in dealing with fisherwomen of the community?
- Motivate women to become knowledgeable in equipment operation and maintenance.
- Give women training in sources of supplies, legal matters, licenses, fishing rights, company opportunities for marketing and processing.
- Use female trainers/instructors to encourage female participation in courses.
- Make provisions that a significant percentage of scholarships go to female applicants.

Credit Services

Women tend to borrow heavily in informal credit markets, despite their high interest rates. Several factors restrict women's access to formal credit programs: the channels used to disseminate information on such programs, collateral requirements, transaction costs and repayment schedules.

Project planners, executing agencies and evaluators should assess the credit system of a project and provide the necessary remedial action to ensure women are not excluded. To this effect, the following questions should be addressed:

- Are fisherwomen aware of sources of credit available, and will they receive training/information on how to apply for it?
- Do collateral requirements, transaction costs, and repayment schedules exclude fisherwomen from access to formal credit?
- Is access to credit necessary for greater female participation in the sector? If so, what types of mechanisms will be in place during and after the project to increase this access?

Resources

Brownell, Bill and Lopez, Jocelyne. "Small-Scale Fisheries: Women are the Backbone". Women and Development (Development Forum, UNU, New York, 1985), p.38.

Development of Small-Scale Fisheries: The IFAD Approach, (Contributing Paper to the FAO World Conference on Fisheries Management and Development), Rome: International Fund for Agricultural Development, 1984.

Gulati, Leela. "Fisherwomen on the Kerala Coast: Demographic and Socio-Economic Impact of a Fisheries Development Project", Geneva: ILO, 1984.

Houriham, John J. Women in Development: Guidelines for the Fishery Sector. The Asia Development Bank, Manila, Philippines, August, 1986.

"Idées et action FAO Bangladesh". A Participatory Approach in Stimulating Fisherwomen's Activities. 1986, Vol. 5, No. 170, pp.3-6.

"Rôle de la femme. La pêche artisanale au Sénégal". Issue No. 4, CIDA.

Women in the Artisanal Fishing Industry in Senegal and Ghana: Addis Ababa. African Training and Research Centre for Women, 1984.

Women in Fisheries. (Report on Socio-Economic Surveys in Fiji, Indonesia, Papua New Guinea and the Philippines), Bangkok: UN Economic and Social Commission for Asia and the Pacific.

Women and forestry

Approximately 11.3 million hectares of tropical forest are being destroyed annually, along with considerable areas of woodland and individual trees (Langly, 1982). The resulting deforestation affects urban and rural women and men. The severe shortages of fuelwood and charcoal are well known problems resulting from deforestation. However, shortages of forest products for housing, fodder, food and medicinal purposes and subsequent environmental degradation are equally serious consequences of deforestation.

The increasing demand for forest resources by local populations and the energy crisis of 1973 has led developing countries and donors to reassess the role of forests in alleviating rural poverty. The 1978 World Forestry Conference in Jakarta, "Forestry for People", initiated a major shift away from the traditional emphasis on production forestry towards the protection and management of government-owned forest reserves.

New forestry programs emphasize environmental protection and rural afforestation to meet the basic fuelwood, fodder, pole and minor forest product needs of local communities. This type of forestry has been called community, social, farm, and village forestry. It covers a wide range of activities: planting on common land, planting on individually-owned lands, rehabilitation of degraded forest reserves, strip plantings along roadsides, canal banks, and tank foreshores, and the distribution of marginal lands to landless individuals for tree planting. Social forestry differs from conventional forestry in that it involves the direct participation of the beneficiaries; forest products are for immediate local use, and foresters, who have been trained to protect and manage trees, must learn to work with local communities to grow trees.

The success of people-oriented forestry projects depends upon the involvement of local women and men. Women are key participants in the forestry sector in a number of areas, yet their direct use of forest resources and their needs and skills, which are vital to the success of many projects, have often been overlooked. As a result, some projects have failed. Due partially to the lack of women's full involvement in forestry projects in the past, there is a resultant lack of data on which sectoral reports and project designs are based. In general, foresters recognize the need for involving women in the forestry sector, but lack orientation and the means to solve this complex problem. Despite changes in the forestry sector, foresters or extension workers often reach only male village leaders, not only ignoring the needs and preferences of women, but missing the opportunity to tap their knowledge and skills about tree growing, end uses of tree products, and resource conservation.

It is evident that women and men have different expectations of the benefits and time-frame of forestry projects. Consequently, they generally perform different roles and allocate different amounts of time to forestry tasks. The elements which are important in any forestry project are women's control of and access to resources, women's workloads, and women's income- earning opportunities. This chapter highlights women's role in the forestry sector with special attention to community-oriented forestry, constraints to women's participation, potential impacts of forestry projects on women, and recommendations for involving women in all stages of project development.

Current situation of women in the forestry sector

Women have well-defined roles in the forestry sector. These roles extend beyond the common perception of women as gatherers of fuelwood and fodder. Women participate in a variety of different forestry activities, ranging from forest management on forest reserves to agroforestry emphasizing private tree and crop planting.

The roles of women in forestry projects differ considerably from country to country, and often from village to village, making it essential to understand the traditional roles of women as well as cultural restrictions which prevent them from undertaking new roles. The work women perform varies from instructing and carrying out research in forestry departments at the university level, to working in plywood refinishing mills. However, the opportunities for women in these areas are still limited in most countries, and nonexistent in others. As a consequence, the presence of women in the sector is strongly felt at the grass-roots level, while in professional and decision-making levels, their presence is still weak. Projects need to address the absence of women within the cultural context of each project.

Besides being primary users of forest products for domestic consumption, and to some degree, conservers and managers of forests, women assume major roles in various other aspects of forestry, as outlined below.

- In forest industries, women are involved in gathering, processing and marketing, generally within the informal sector. In many cases in Asia, women form the largest part of the workforce in forest industries based on rattan, cane, bamboo, oilseeds, roots, fruits, handcrafted paper, plywood finishing, silkworm raising, matchmaking, etc. These industries vary from small household industries to village level factories and are very dependent on the availability of basic forest resources (Hoskins, 1985). These industries tend to be characterized by low levels of technology and productivity and require considerable attention in forestry planning. In the formal sector, women are employed as laborers in industries such as plywood. However, women generally perform menial tasks and often do not benefit from the introduction of advanced technology, as they are not likely to be considered for further training.
- Women work as technicians in plant propagation. In the Dominican Republic, the Plan Sierra Development Project trained women to work as budders and grafters which enabled them to expand their own private economic activity by using these skills (Fortman, 1984).

- Women work as professional foresters, forest rangers and extension agents. In the Philippines, many young women have graduated from the forest ranger degree programs. Women teach and undertake research in forestry. In Arunachal Pradesh and other states in India, there has been an increase in the number of women forest guards hired (Hourihan, 1987). However, projects need to continue to support training aspects at all levels in order to increase the number of women in the profession and to create an awareness of women's capabilities in the sector.
- Women are primary suppliers of fuelwood and fodder. These resources are increasingly important sources of income for women. The effects of shortages are often hidden, but it is well known that women bear the largest burden of household scarcity.
- Women work as laborers in logging, road construction, plantation, and nursery establishment and management. A study in Maharashtra State in India found that women day laborers constituted over 75 per cent of the employees involved in nursery and plantation work, 50 per cent of the workers in the construction and maintenance of forest roads, 30 per cent in the construction of forest department buildings and 20-25 per cent in planting, thinning and fire protection (Chowdhary, 1980).
- Women are forest production experts. Though largely underused, women are often the primary source of information for the identification and use of non-wood forest products. It was noted that women in Sierra Leone could name 31 forest products they gathered while men could only name eight. In Kenya, women identified more than 20 woody shrub species which local foresters and extension agents did not know (Fortman, 1986).
- Women are forest planners. They have considerable experience, due to their quantifiable economic and domestic roles in the sector. Their knowledge and skills should be tapped by project planners when considering species selection, crop/tree/grass combinations, and end uses of forest products.

Constraints to Women's Participation

Women involved in forestry face all the major constraints which inhibit women's involvement in many other economic activities: lower literacy, less access to information, less mobility, lack of organization, as well as social, political, and class barriers. However, one of the largest constraints facing the integration of women into the forestry sector is the perception that forestry is too physically demanding and technically complex. Women also suffer because of the false assumption that women will automatically benefit from any tree planting. Following are further constraints, along with examples of potential solutions, that should be addressed during the project planning stage:

Constraint – land tenure and competition for land	**Response and Dangers**
Land tenure is often cited as the most difficult problem to deal with in forestry, especially for women. Women generally do not have access to land and may have little interest in planting if they are not sure they can harvest benefits. Forestry projects may change traditional patterns of land use, taking from women traditional rights such as grazing rights.	The problem of land competition and tenure requires that women's needs be examined in the context of integrated forestry/agriculture and/or silvopastoral systems, and that women receive a product use guarantee before the project commences. With varying degrees of success, projects have approached this problem by assigning ownership of specific trees, and by securing a contractual agreement for land use for a certain number of years. One project did find that title fixing for women made them less secure tenants because they were working on land that could be sold. In Burkina Faso, village leaders gave a piece of land to a women's group. After the women had made it into a profitable garden, the leaders took it back and gave them another, further away (Hoskins, 1979).

Constraint – time-frame for forestry projects	Response and Dangers
Delay between the initial investment and the realization of benefits is a major disincentive for women participating in forestry projects since their primary responsibility is caring for their family on a day-to-day basis.	– Projects have attempted to overcome this constraint by providing incentives such as paying participants to plant and protect seedlings. Experience has shown that this type of incentive can affect the way in which participants regard the trees; often they lose the sense of ownership and do not assume responsibility for the trees. It also limits the number of hectares that can be planted and the replicability of the project. However, in certain situations, paying participants is a desired solution. – Agroforestry/silvopastoral systems allow women to realize short-term benefits such as crops, fiber, and fodder without sacrificing the long-term benefits of tree planting.

Constraint – spatial considerations	Response and Dangers
The distance from women's homes to the project site can preclude their participation in forestry projects due to transportation as well as cultural constraints. Also, if it is an ecologically oriented project, such as erosion control on eroded hillsides or dune stabilization away from the village, with no recognizable short-term benefits, it may be difficult to generate interest in the project.	Local interests and women's mobility must be considered. Women must be convinced that they will benefit from the project; otherwise they will not participate in forestry activities. At the onset of the project, beneficiaries and the benefits they will receive must be designated.

Other constraints which preclude women from participating in and benefiting from forestry projects include:

- The tendency to assume that evaluating women's involvement is costly and time consuming (Kerns, 1985). Often the problem is that baseline studies are undertaken after project implementation has begun, or that studies are not properly focused.
- The lack of scientific knowledge due to few systematic trials for species on which women rely heavily. Lack of species-trial results constrain forestry programs designed for women (Molnar, 1988).
- The already heavy workload of rural women, who must incorporate new forestry activities with their existing agricultural duties. In Sierra Leone, men planted a tree that produced fruit traditionally processed by women. Much of the fruit spoiled because women were fully occupied during that season (Hoskins, 1983). Measures to alleviate women's workloads such as the appropriate location of plantations, the introduction of improved technologies, transportation devices, and appropriate tools should be incorporated into forestry projects.
- Social mores and cultural tradition often prevent women from undertaking certain tasks in the forestry sector. These often vary from village to village and cannot be generalized from project to project. For example, in certain parts of Kenya, women are not allowed to plant trees, as that is associated with land ownership.

Potential Impacts

The positive impacts of forestry projects are well known (and exhaustively covered in the literature in the reference section) in terms of benefits participants receive with respect to: a) the production of fuelwood, fodder, minor forest products, and construction materials; b) income-generating opportunities derived from selling and marketing produce, participating in wage-earning activities such as tree planting and seedling raising, and employment in the forestry profession and forest industries; c) as well as long-term environmental effects. However, potential negative impacts from forestry projects receive much less attention due to their project specific nature and the frequency with which they occur. They therefore will be considered in greater detail here.

The manner in which socio-economic issues are addressed during the project planning stage is one of the most crucial factors influencing the impact of forestry projects. If women are to be beneficiaries, a needs assessment survey should determine the type of project activities appropriate for a particular target group and compatible with local site conditions. If women are not specifically targeted, measures

should be adopted to minimize any possible negative effects. The following are the type of negative impacts which can result without proper consideration of women's current roles and needs:

- If forest produce from project plantations fails to reach women, the pressure on existing forest reserves may increase rather than decrease if land traditionally used by women is no longer accessible to them. Efforts to develop plantations for fuelwood and timber have reduced access to areas which had been used by local women for collecting forest products and grazing small animals (Hoskins, 1985).
- Women's economic activities can be undercut by a project. A project in Borneo introduced chain saws which only men could use, excluding women from woodcutting, a task that had previously been performed jointly, yet providing them with no other employment opportunities (Hoskins, 1985).
- If women are expected to provide family labor inputs that conflict with their present workload, they will either not participate in or neglect the project. An agro-forestry project in Kenya required women to haul water for seedlings in farm nurseries, without considering the impact on their workload. When shortages forced women to travel 2 - 5 kilometers, the women refused to go (Molnar, 1988).
- If women are faced with increasing time and energy constraints, daughters often help with extra work. It has been observed that daughters are taken from school and the family size increased to meet this demand for labor (Hoskins, 1983).

Strategies for addressing the involvement of women in forestry projects

The involvement of women in forestry projects both as beneficiaries and as participants is economically vital, not only to the project's success, but to long-term sustained forest management. However, the successful integration of women in forestry projects will continue to require a focused effort by project planners and implementors, as well as recipient countries.

The following general strategies should be considered when identifying areas of involvement for women in forestry projects:

- Provide more resources to train women foresters at all field levels: professional forester, forest ranger, and extension agent.
- Develop local solutions and adaptations based on women's priorities and needs.
- Develop the economic role of women in forestry by including income-generating activities for women.

An analysis of a World Bank village woodlot project in Gujarat, India indicated the project would have been more successful if women had been included in project planning and in meeting the needs of small land holders, both men and women. Local people would have benefited more if acacia trees were spaced widely enough to promote fruit production, fuelwood had been locally consumed with the surplus sold, and seed pods had been harvested by women for their cattle.

Project Planning

A cost-benefit analysis which examined the cost of involving women in project planning indicated that economic returns are equal or greater in models that ensure women are beneficiaries and that involving women ensures that projects meet their original objectives (Molnar, 1988). If women are to contribute to and benefit from the project, they must be involved in the planning process, and throughout the project. The following issues need to be addressed in the design stages:

- Have constraints to women's participation been identified and resolved to ensure women's participation? For example, has the mobility of local women been considered in establishing the location of the project site? Have time, social and financial constraints been adequately addressed?
- Has the expertise of local women been used in the planning of the project and will local women have a direct and decisive influence on the project? Will the identified needs and roles of women be incorporated into the project design?
- How is the project intended to benefit women and how will the project ensure that women realize these benefits?
- Can access to land and to forest products be assured for the duration of the project?
- What is necessary to increase the participation of local women? Will local female participation be increased if women experts from the country are involved?

Information Base

Site and gender-specific information are essential in integrating women into forestry projects. Since it is often difficult to gain a clear picture of the extent women are engaged in various forestry-related activities, it is important that socio-economic studies relate directly to the specific objectives and activities of the project. Such studies are crucial not only for involving women in a project, but also for measuring the project's long-term impact. The best sources for this type of information are:

- Grass-roots women's organizations;
- Group interviews with village women from different economic and ethnic backgrounds;
- Discussions with women leaders, meetings with women forestry workers (forest guards, extension agents, nursery workers);
- Studies by researchers or NGOs working in the project area.

Information should be gathered during the planning stages in conjunction with baseline data collection for the project. If this is not possible, it should be explicitly stated that baseline and gender role studies should be conducted during the inception mission. The following types of information should be included:

- What traditional tasks, undertaken by the target population (men, women, and children), are relevant to the project objectives?
- What is the division of time and labor, by gender and age, to accomplish these tasks? What proportion of women's time is spent on forestry activities and in what areas do men and women collaborate in carrying out these tasks?
- What potential roles could women assume in the project? Are there social, cultural, legal or economic constraints which would prevent them from undertaking these roles or receiving intended benefits?
- What are the potential gains and losses to women and their households from the proposed project?
- What is the principal source of energy and fodder in the project area, and what is the role of women in its production and/or supply? Will the project negatively or positively affect this role?
- Does the project provide a mix of species, including types that meet the preferences of women, at a price women can afford, from nurseries that are easily accessible?
- Have the women in the project agreed to the type and distribution of benefits? Is there any need for formal agreements setting out methods of sharing benefits or responsibilities under the project?
- What organizations can help to ensure women are involved in and informed about project activities: female extension agents, women's organizations, NGOs?
- What training is needed for women and what type of skills should they acquire by the end of the project?

In a CIDA forestry project in Honduras, a socio-economic study prepared the project planners to orient certain project activities towards the specific needs of women. A portion of the budget was allocated to finance local initiatives including traditional enterprises for women.

Access to and Control over Resources

Forestry planners need to consider how a project will affect women's access to and control over resources. Changed land uses, increased production of certain forest projects, and improved technologies can decrease women's income, negatively affect their status, and increase their workload. Specifically, they need to consider:
a) changes in the forest ecosystem and the effects on women's income-earning potential; b) increases in fuel scarcity and the impact on basic family needs; and c) increasing scarcity of fuelwood and fodder and the effect on women's workloads. The following types of questions should be addressed in order to assess these problems:

- How will the various project activities affect the social and economic situation of women and their access to resources?
- Who controls the cash in the family and do women have access to money for seedlings, fertilizer, and pesticides? Is credit necessary for women to obtain these items?
- Will women be able to acquire and retain land and have access to water or irrigation systems? If not, will they be excluded from participating in the project?
- Do women have adequate access to credit for forestry-related activities? How can their levels of credit be enhanced, collateral requirements reduced and repayment schedules made more flexible?
- Will women have access to vehicles used for hauling wood and other project-related equipment? Will the use of these items be monitored to ensure that women retain this access?

Project Implementation

Just as men must be convinced of the soundness of a forestry project, so must women be convinced that the silvicultural systems proposed are sound and that the proposed benefits will actually improve their welfare and the welfare of their families. Also, men are generally not opposed to women participating in forestry activities if they perceive economic gains for the family.

> In a World Bank-financed forestry project in Nepal, it was learned that men did not object to women participating on forestry committees or as nursery foremen. Men did not actively seek to involve women, but when encouraged by the project, they were quite open to their involvement (Molnar, 1986).

Due to unfamiliarity with the goals of forestry and cultural and legal barriers, women are sometimes reluctant to become involved in forestry projects. Incentives such as free seedlings or fertilizer, ownership of trees, and paid wages for certain activities can often make a difference in the participation of women.

The following table outlines possible activities that should be considered when undertaking forestry projects:

Type of project	Activities
Village Woodlots/ Community Forestry	– involve women in decision-making process (membership on forest committees and steering committee) – design silvicultural systems that produce types and amounts of products that meet both women's and men's needs and preferences – consult local women and women's groups during the planning process – hire and train women extension agents – ensure that benefit distribution is agreed on before the project commences

Type of project	Activities
	– ensure that women are paid equivalent wages and have an equal opportunity to own trees or lease tracts of land – make provisions for child care – introduce tools for site preparation, planting and harvesting that can be used by women – involve women's groups in planting efforts, seedling distribution, extension work and cooperative nursery establishment – adjust timing of planting and maintenance operations so they do not conflict with other activities – facilitate acquisition of marginal and waste land for use by women – hire women foresters to participate on project missions and in the executing agency
Farm Forestry/ Agroforestry/ Private Plantings	– train and hire women extension agents and animators – sensitize male extension agents and foresters to the needs and preferences of women – design planting systems to consider species preferences and forest products end use for both men and women – conduct research on alternative crop/tree/grass combinations to maximize different products – provide technical assistance in all aspects of species selection, planting, maintenance, and harvesting – provide opportunities for women to establish and manage nurseries (access to water, seed, land) – improve access to credit for seedlings, fertilizer, tools, etc. – provide training in marketing of forest products

Type of project	Activities
	– ensure that fruit tree seedlings and species preferred by women are readily available, either through private nurseries or at cost in project nurseries
Forest Management Watershed Management Fire Management Forest Inventory	– ensure that women have equal employment opportunities at all levels of the project – ensure that women receive the same remuneration as men for equal work – provide training opportunities for women that will enable them to be employed by Forestry Departments and forest industry – ensure that women are aware of opportunities in forestry, within the project and, in general, through proper dissemination of training and employment information – hire women foresters to participate on project missions

In the CIDA/CARE Agroforestry project in Sudan, there are built-in mechanisms to ensure that women benefit from the project. If men dominate any specific activity too strongly, the project would set up parallel activities geared towards women; half of the extension workers are women; village nursery committees include women; and women are trained as nursery people.

Training and Extension

One of the weakest aspects of community forestry initiatives has been extension programs. In many countries, there is no tradition of forestry extension and foresters are not trained in extension techniques. Forestry planners reach participants by developing methods appropriate to a particular project. In most cases, these methods include extensive training of extension agents, animators, and village contacts. Thus, there is ample opportunity to recruit and train women as well as sensitize male workers to women's needs.

Despite advances, women constitute only a very small percentage of professional foresters in most Third World countries. Barriers to women's participation can be addressed by introducing women to opportunities in forestry through career guidance workshops and by ensuring that they are well represented in training and scholarship programs.

The following should be kept in mind when considering training and extension needs:

- Will female graduates and trainees for professional, semi-professional positions, and staff training programs be actively recruited? What proportion of qualified candidates for the proposed training program are female? Should the training program be modified in order to ensure that more females qualify for admission or should special measures be undertaken to increase the number of qualified females?
- Will scholarships be available specifically for women, in subjects that will enable them to be hired by Forestry Departments and Industry?
- Will project personnel be accountable for the participation of women in the project, training programs and in extension services?
- Will farmer training courses be scheduled so women will not have to travel and during times when other activity requirements are low?
- Will women receive training in nursery management and techniques, site selection and preparation, selection of species, planting, weeding, maintenance, and harvesting techniques, use of fertilizer and equipment, and information on marketing and income-generating opportunities?
- Will women receive instruction on legal matters, such as control of land and property deeds?
- Will women extension agents be recruited and trained at all levels? Will women's groups be involved in extension work?
- Have measures been taken to enable women extension agents and animators to perform their work? Do women have access to transportation to adequately cover their area? Do they work in pairs, perform duties during the day if necessary, receive adequate training?

In India, a CIDA feasibility mission was told it would be impossible to hire women extension agents as women would not want to leave their homes, would not be able to use mopeds, and would not have appropriate backgrounds to train. But during the course of the mission, many women expressed interest in such positions; and women extension agents were interviewed for new assignments.

World Bank forestry projects in Nepal found that, in the short term, it may be more effective to train male foresters to understand women's roles in forestry than to try to recruit qualified women (Molnar, 1988).

Project Monitoring and Evaluation

Due to the long-term frame of forestry, projects can have positive and negative long-term impacts and, if monitored and evaluated, can be extremely beneficial in modifying ongoing projects and in planning future projects. Specifically, information generated can aid in adjusting plantation models and harvesting patterns, provide the basis for promoting additional species, and initiating other project components such as credit plans. Women's involvement in the various project stages needs to be carefully monitored throughout. At the end of the project, women should be asked what they have gained and lost. The effects on women will be easier to evaluate if objectives for women have been clearly stated at the beginning in the project plan, if disaggregated socio-economic data are collected before implementation and periodically throughout the project, and if targets have been established to measure progress. Also, special studies should be undertaken to answer questions not addressed during the planning stage. When evaluating forestry projects, the following issues should be addressed:

- Have women gained or lost with respect to: land ownership or access to land in their own right; control or sale of forestry products; direct opportunities for cash income; assistance from other household members due to migration?
- What sources of food have expanded or diminished, and what has been the effect on family diets?
- Has there been a reallocation of women's work load or time and have the changes been positive or negative?
- How many women were employed by the project relative to men and in what capacity? Has there been a decrease in income inequalities between men and women?
- Are intended beneficiaries participating in the project and receiving project inputs?

- What species are selected and what planting models are preferred by gender? Who establishes private nurseries and who provides the labor for different operations?
- How many women extension workers have been trained and how many are employed by the project? Which farmers (men, women, landless, etc.) are reached by women and by men extension workers?
- How many women have received training through the project and what are their employment opportunities in the Forest Department and in industry?
- Have the needs of project participants changed since the project was formulated?

Resources

Chowdhary, R.L. Employment of Women in Forestry. Dehra Dun Seminar, Dehra Dun. 1980.

Fortman, Louise. "Women in Subsistence Forestry". Journal of Forestry, Vol. 84, no. 7, 1986. p. 39.

Fortman, Louise, and Dianne Rocheleau. Why Agroforestry Needs Women: Four Myths and a Case Study. UNASYLVIA, Vol. 36, No. 146. 1984.

Hoskins, Marilyn. "Rural Women, Forest Outputs, and Forest Products". Draft, FAO, Rome. 1983.

Hoskins, Marilyn, and G. Guigonis. Actions forestières pour le développement rural communautaire au Sénégal. FAO, Rome. 1979.

Hourihan, John. Gender Issues in the Preparation and Implementation of Forestry Projects. Asian Development Bank, Manila. 1987.

Kerns, Virginia. Reporting on Women and Men in FAO-Assisted Forestry Projects, FAO, Rome. 1985.

Kone, D. and A.D. Jensen. Etude sociologique sur la motivation et les actions des populations à l'égard de l'arbre. Projet de reboisements - Sénégal, Technical Report No. 1, FAO, Rome. 1982.

Langly, J.P. Tropical Forest Resource. Forestry Paper No. 3, FAO, Rome. 1982.

Molnar, Augusta. Women and Forestry: Encouraging Participation. Draft, World Bank, Washington, D.C. 1986.

Molnar, Augusta. Women and Forestry Guidelines. Draft, World Bank, Washington, D.C. 1988.

Noronha, Raymond and John Spears. "Sociological Variables in Forestry Project Design" in Putting People First, Michael Cernea, editor. World Bank Publications, Washington, D.C. 1985.

Restoring the Balance. Forestry Paper, FAO, Rome. 1988.

Tree Growing by Local People. Paper 64, FAO, Rome. 1985.

Women and health, population and nutrition

Women play a key role in improving health and reducing population growth. However, cultural and social attitudes can delay progress in these areas and remain major obstacles to be overcome.

Medical advances and development efforts have led to a reduction in the mortality rate, particularly that of infants. However, in most cases, the fertility rate has not followed this trend and, in some areas, has even increased. The result is high rates of population growth, ranging from 2 to 3.5 per cent a year and rising. At this rate, the population of the poorest countries will double by the year 2017 (UNU, Development Forum, 1985).

A high population growth rate and its corollary, a young population, creates pressures on health care services, education and available food and environmental resources. Unless changes are made in the area of reproduction, the vicious circle of poverty and poor health cannot be broken.

The various factors associated with health and reproductive behaviour are social, cultural and economic.

Women's health is not only affected by their own biology; it is also affected by their economic and social status. Improving women's health depends, among other factors, upon improving their standard of living, education and working conditions. In order to ensure an improvement in the health of the family and community, the role and knowledge of women must be recognized and encouraged and their health protected.

Given the scope of health problems faced by women and their effective contribution as official and unofficial providers of health care services to their family and community, the integration of women in the health care sector is of vital importance in development initiatives. Women have a significant role in decision-making in health and development.

In the planning of development projects in this sector, the role of women and constraints in the environment must be taken into consideration, intervention possibilities favoring women must be analyzed, and a strategy seeking their efficient participation in the various phases of the project must be adopted.

Current situation of women in the health, population and nutrition sector

As producers, mothers and care-givers responsible for their family's health care and nutritional needs, women play a key role in development efforts to improve health and reduce population growth.

Women generate a large part of agricultural food production and are responsible for processing and preserving products grown for family consumption.

As educators, women play a crucial role in transmitting traditional and modern knowledge on health care to their children and families.

Women play an important role as informal providers of traditional preventive and curative medicine to protect the health of the mothers and children in their community.

The most basic health services offered by the formal network are provided by women.

Problems with the involvement of women in health, population and nutrition development programs

Problems and constraints

Various health, economic, socio-cultural and structural constraints should be identified and considered in the project development process:

- The population growth rates of developing countries are increasing, causing an insufficiency, even depletion, of food and environmental resources.
- The birth rate remains high; many pregnancies, which are too closely spaced, too early or too late, represent a serious risk to general health, mortality and morbidity of women and children.
- Pregnancy and related after-effects are the primary causes of death among women aged 15 to 44 years.
- Women suffer from nutritional imbalances. Two-thirds of pregnant women and at least one-half of all others are anemic (UN Statistical Office, 1984).
- In general, marriage at a young age has negative effects on women: abandoning studies, early motherhood and deterioration of health.
- The lack of information about availability of and access to birth control methods leads to the rapid deterioration of women's health, as a result of several closely spaced pregnancies at a young age and illegal abortions performed in hazardous and unsanitary conditions.
- The lack of drinking water and health infrastructures, especially in rural areas, cause many diseases.

- Low incomes and the high cost of health care make health care services inaccessible to women.
- The limited number of information and education programs on basic preventive and curative medicine constitutes a major obstacle to the improvement of women's health.
- Some customs have negative impacts on women's health. Inequitable distribution of food (quality and quantity) within families deprive women of protein-rich foods.
- Insufficient research is conducted on traditional medicine, making it impossible to avoid inappropriate practices that endanger health.

Intervention possibilities

In order to improve women's health, development efforts must give priority to the following areas:

- The involvement of women in active roles as agents and beneficiaries in all phases of the project cycle.
- The integration of women in the decision-making process.
- The promotion of education programs in preventive medicine, nutrition, hygiene and family planning for women and young people.
- The training of primary health care workers: basic health care officers, midwives.
- The strengthening and institutional support of health care structures, particularly in rural and underprivileged areas.
- The establishment of water pumps for clean drinking water, thereby limiting disease and reducing the arduousness of women's tasks.
- The development of income-generating activities for women so that they have the financial resources to gain access to health care.
- Support of multi-disciplinary initiatives in which the health problems of women, children and the community are addressed and resolved in an overall environmental context that takes social, demographic and economic factors into consideration.

Strategies for addressing the involvement of women in health, population and nutrition projects

Identification

- What health care services currently exist? To what extent are they used by women? What is the ratio of female users to male users? As women, as mothers?
- Are there primary health care clinics near the home or workplace of most women in the region?
- Are there sufficient women on staff in these clinics, particularly in rural areas?
- What is the national health care policy? How much importance does it place on preventive medicine? Curative medicine? Family planning?
- Are there family planning, health and nutrition programs? Who promotes them? Do these programs meet the needs of women or should they be modified or improved?
- Is the use of contraceptives legal in the country? Do women have access to contraceptives regardless of age, marital status and number of children?
- What is the rate of use of contraceptives? What are the main methods of contraception used? Where do they come from? How much do they cost and how long does it take to get them? Are they used on a short-term or long-term basis?
- Are there information/education programs on family planning? If so, are they adapted to the socio-economic and cultural conditions of the region?
- At what age do women marry? What is the incidence of marriage break-ups, polygamy, remarriage and arranged marriages?
- At what age do women have their first and last child? What is the spacing between pregnancies? How long do the women nurse? What is the average number of pregnancies, and of children per woman?
- What percentage of births are assisted by midwives? Are midwives qualified? Do they use modern or traditional techniques?
- What are the socio-economic factors affecting the health of women and children?
- What are the cultural and social attitudes toward unwed mothers?
- What are the maternal and infant mortality and morbidity rates? What are the most serious illnesses? What are the main causes of these illnesses?
- How common is sterility and underfertility? What are the main groups that suffer from sterility and underfertility? What are the main causes and effects?
- How common is abortion? What groups are primarily concerned? What are the effects on the woman's health?

Planning

- Will the project use female medical personnel, particularly in regions where customs dissuade women from being treated by men?
- If the project provides for the creation of a family planning clinic or centre, will its location and hours be convenient for women?
- If the project provides for health/family planning services, does it also provide for training/information on health care, nutrition and family planning? Will this training/information be offered by a separate service or by existing institutions, such as schools, clinics, women's organizations, cooperatives and community programs or services?
- If the project is in an urban region, can vegetable gardens or community gardens be introduced for growing nutritious and accessible food? Is financial and/or technical assistance planned for this purpose?
- Could the use of better food processing and storage methods increase the nutritional value of the food consumed? Does the project provide for the use of such methods?
- Have activities been planned to follow-up information programs on nutrition, health and family planning for women, on-going information sessions, advertising/radio bulletins, home visits, etc.? Will programs encouraging the use of contraceptives be monitored to determine possible side effects or problems?
- Will organizations dealing with women, such as local NGOs, women's groups/clubs, schools, unions, credit unions, cooperatives, religious groups and marketing associations, be called upon in order to reach as many women as possible in the region?
- Will information and/or training on methods and advantages of family planning also be given to men?

Training

- Will health care personnel be trained to recognize the symptoms and treat the health problems that primarily afflict women, such as backaches caused by carrying heavy loads on the head, anemia, gynecological and obstetrical disorders, eye and lung diseases caused by cooking smoke, etc.?
- Will professors of hygiene and nutrition provide information that is pertinent to the region (for example, nutrition programs based on the fruits, vegetables and cereals that can be obtained in the region, taking into consideration the local income, the availability of drinking water, local food preparation techniques, and cultural taboos relating to food)?
- Has training for teachers in the fields of health, nutrition and family planning, sanitary services and obstetrics (for midwives) been planned?
- Will the teachers of the region be qualified to support initiatives aimed at changing the food, hygiene and sanitation habits, and attitudes regarding family planning which are detrimental to women or their family?
- Will school programs include training on nutrition, hygiene and family planning for boys and girls? Does the project provide for training, information and education programs for the professors in the community?

Resources

Anker, Richard, Mayra Buvinic et Youssef H. Nadia, Women's Roles and Population Trends in the Third World, London, Croom Helm, 1982 (ILO/Wep Study).

AQOCI, "Les femmes et la santé", Le monde à l'envers, No. 4, June 1986, Montréal.

Black, Maggie, Planification de la famille: Un élément essentiel de la santé des femmes, Résumé: Conférence internationale sur la contribution de la planification familiale à l'amélioration de la santé des femmes et des enfants, Nairobi, Kenya, October 5-9, 1987.

Blair, Patricia, Health Needs of the World's Poor Women, EPOC, Washington, D.C., 1981.

Conférence internationale sur la contribution de la planification familiale à l'amélioration de la santé des femmes et des enfants, Résumé: Les principales conclusions de 13 documents de base techniques, Nairobi, Kenya, October 5-9, 1987.

Leger Sivard, Ruth, Women...A World Survey, World Priorities, Washington, D.C., 1985.

Mead, Cain, Women's Status and Fertility in Developing Countries, World Bank, Washington, D.C., 1984.

Piampiti, Suwanlee, Effects of Women's Participation in Development on Fertility, Mortality and Migration, Bangkok, Thailand, 1982.

Preventing the Tragedy of Maternal Deaths. A Report on the International Safe Motherhood Conference, Nairobi, Kenya, February 1987.

Rousset, Dominique, Femmes contre la faim, Comité français contre la faim, Paris, 1986, 75 p.

World Federation of Public Health Associations, Women and Health: Information for Action-Issue Paper (Prepared for the AGA KHAN Foundation and UNICEF), Washington, D.C., March 1986.

Women and human settlements

The development of human settlement projects is a complex process. Upgrading the living environments created by people not only involves housing considerations but also encompasses a broad range of related inter-sectoral considerations, including water and sanitation, public health, market locations, and transportation systems. For the purpose of clarity, most of these related elements have been incorporated into the sector papers on the previously mentioned topics. However, effective development work requires a comprehensive approach.

Poor households face many socio-economic constraints to their participation in land development projects. Poor households headed by women often face these constraints to an even greater degree. For example, land titles in many countries are passed only through male family members upon marriage. If such problems are not overcome, the poor, and particularly women, may remain trapped in the poverty cycle and excluded from the benefits of housing projects.

In developing countries, home ownership is becoming progressively more difficult as urban land prices rise more rapidly than incomes. For women, who tend to be in the lowest income brackets, this problem is particularly acute. Enhancing the participation of poor women in rental housing could also directly and positively affect their lives.

The following overview takes a look at the present situation of women in the sector, points out constraints that prevent women from benefiting from housing projects and provides recommendations and examples from various organizations concerned with the participation of women in the sector.

Current situation of women in the housing sector

Women as a Target Group

- Urban women constitute 58 per cent of the total female population in Latin America, 20 per cent in Asia, and 17 per cent in Africa. Due to rapid social change and the limited absorptive capacity of the rural sector, those numbers are changing rapidly, especially in Africa and Asia.
- It is estimated that about 30 per cent of households worldwide are headed by women. In urban areas, however, the proportion of these households is considered substantially higher.
- Data on urban women show that they are, in general, younger, less educated than men, and more responsible for both managing the household and contributing to its income. Urban women are overrepresented in low-paying and informal sector occupations (Lycette and Jaramillo, 1984).
- Women in developing countries face serious difficulties related to shelter requirements, because of financial conditions, illiteracy, lack of marketable skills and educational deficiencies.
- Issues related to the housing requirements of women are often ignored in the political agenda of developing countries (UN Habitat, 1985).

Significance of the Sector to Women

- The amenities of home life have a direct bearing both on the personal well-being of women and their family members and on stability and success on the job.
- Properly planned settlements with suitably located shelter, infrastructure and support services enable women to participate fully in the development of their communities.
- Human settlements policy requires a continual process of public participation which gives women the chance to be both participants and beneficiaries. It also gives them the opportunity to use their skills and experience for the benefit of the community (UN Habitat, 1985).

Constraints encountered by women in the sector

The following features of urban housing projects have been highlighted as having potential negative impact on low-income urban women (Lycette and Jaramillo, 1984).

Information Distribution Channels

The dissemination of information about projects occurs in a number of ways, for example: house visits (during the day); advertisements in local newspapers; public notices at market places and places of employment, local organizations and cooperatives. These channels are not necessarily effective in reaching low-income women.

Low-income women tend to have low literacy levels. They are often not found at home during working hours and they are often excluded from local clubs, organizations and cooperatives.

In Honduras, housing is organized through local councils to which women are rarely elected.

In predominantly Muslim countries, women have even more limited access to information because of societal restrictions on their social and political activities.

Selection and Affordability

Selection and affordability criteria are established to ensure that project housing is allocated to low-income families and to families that will be able to maintain the payments.

Three types of requirements are usually established:

Income Requirements

Women who head households in urban areas tend to have substantially lower incomes than male heads of households. Research has demonstrated however that one of the principal survival strategies of this socio-economic group includes income received on a regular basis from relatives and male companions who do not reside in the household.

If the criteria for minimum income requirements included transferred income as well as earned income, a much higher group of women heads of households would meet the income eligibility requirement.

Down Payment Requirements

Down payment requirements are often introduced to diminish the risk of default and to keep the monthly payments low. But low-income women are unable to meet down payment requirements more often than men and, for this reason, are excluded from housing projects in greater proportions.

Other Criteria

Other selection criteria, such as barring applications with a property-owning spouse, can be detrimental to women in some countries. The purpose of this type of criteria is to prevent speculators from taking advantage of the benefits of low-cost housing projects. In polygamous societies, the same measure introduces a systematic exclusion of many women, who, although married, maintain separate households.

Income stability

This requirement is established to ensure cost recovery and decrease risks of default in the monthly payments. Applicants are requested to provide information on their sources of income. Female applicants are often at a disadvantage because they are mostly involved in informal sector enterprises.

Because of the trade-off between lower down payments and higher monthly payments, reduced down payment requirements will not necessarily improve women's access to housing projects. Restrictions usually exist on the proportion of income to be allocated to housing.

A World Bank report on the impact of selection criteria in a housing project in Senegal notes a tendency to select formal over informal sector workers. The report also points out that of the applicants selected, 13 per cent were women. Women represented 21 per cent of the total applicants (Lycette and Jaramillo, 1984).

Project Financing Mechanisms

Urban housing projects are usually developed by government agencies and financed by formal financial institutions. The financial mechanisms developed for housing projects may not be the most appropriate to reach low-income women.

The following have been reported as the pitfalls of such systems:

- Elaborate application procedures;
- Inconvenient location and business hours of financial institutions;
- High transaction costs;
- Inappropriate repayment schedules;
- Collateral requirements;
- Attitudinal barriers among officers of financial institutions.

A survey of women heads of households applying for a housing project in Quito, Ecuador shows that only 15 per cent of the women surveyed, eligible in terms of income, had savings enough to make down payments. Seventy per cent had savings that were not even equal to half of the minimum down payment required (Lycette and Jaramillo, 1984).

Factors influencing women's decision to apply for project housing units

Site Location

Women's decisions to apply for shelter are strongly influenced by the location of the new development.

- If the location involves resettlement and/or the physical separation of residential and working environments, women are often discouraged to apply. Low-income women often combine work at home and in the marketplace.
- Women are encouraged to apply to housing units if the development includes (or is near to) child care facilities, schools and community buildings that promote and facilitate services and networks among women.
- Transportation to and from the city is also an important factor.

Type of Self-Help Project

- Potential female clients may be unable to consider shelter options that require substantial time investments in housing construction. Limitations could include:
- Lack of income to purchase construction materials;
- Lack of construction skills;
- Lack of time;
- Female heads of households face greater time constraints and are less likely to have other adult members with construction skills or time to invest in mutual help arrangements.

Physical Design of the Housing Units

- Women need to consider housing that will allow them to continue their income-generation activities from the point of view of space as well as land-use codes of the city.
- Housing units that include rooms for rent can provide a significant source of income for low-income women.

Strategies for addressing the participation of women in shelter projects

Review and Complete Existing Information (Baseline Survey) on the Housing Patterns and Needs of Men and Women to be Affected by Project:

- In collaboration with local men and women, a baseline survey should be conducted aimed at gathering information on the socio-economic characteristics of the people that would benefit from the project.
- The data collected should be analyzed and presented to project planners and decision-makers, so that the project design will correspond to the needs of local people.

Consult and Involve Women in the Planning and Implementation of Housing Projects

Women must play a significant role in the collection of data, planning, design and construction of their homes. The following are examples of the involvement of women in UNCHS (Habitat) technical cooperation projects:

- Women were helped to choose their house plan from among the alternatives available. They proposed changes to suit the circumstances of their families and their work.
- Project beneficiaries were provided with a choice as to the method of construction through aided self-help, housing cooperatives or building brigades.
- Women also took on responsibility in supervising and managing the construction of their houses.
- Women who were actively involved in the construction of houses acquired new skills and were later hired by other self-help project builders.

Improve Women's Access to Credit

A number of housing projects have developed non-conventional financing mechanisms such as group financing, flexible collateral, and sending loan officers into the community (Lycette and Jaramillo, 1984).

- In Guyaquil, Ecuador, an institutional mechanism for improving housing through small loans accepts personal goods that remain in the owners' possession as guarantees.
- The marketplace banks created by the Philippine Commercial and Industrial Bank accept vendors' operating licenses, taxis and stalls as good collateral.
- A project (Los Pocitos) in Panama uses a group guarantee principle in providing housing finance. Each family is required to be a member of its local credit union and join a group whose members become equally responsible for the repayment of individual loans.
- In West Java, Indonesia, marketplace banks used a pioneering experience when loan officers circulated throughout the low-income neighborhoods collecting weekly payments and making new loan agreements.

Improve Access to Housing for Female Heads of Households

There is evidence that urban households headed by women are poorer than households of similar size and composition headed by men. This poverty is, in part, a result of the double burden of women who are responsible both for maintaining the home and family and for earning the primary income for the household. There is also evidence that there is a rising number of households where women are single, widowed, separated, divorced and abandoned with children.

The following recommendations have been made to improve the access of female heads of households to project housing units:

- Shelter options that require self-help construction should be accompanied by loans that may be used to hire labor and purchase materials, so that women who head households are not forced to purchase more expensive units due to lack of time and skills for construction.
- A question on the sex of the applicant should be included in the application for housing. Basic data disaggregated by sex will help to define sex-specific targets and monitor progress toward reaching them in integrated projects (Lycette and Jaramillo, 1984).

Project checklist

General Situation

- What is the current proportion of female-headed households in the region?
- What is the proportion of women engaged in informal sector activity in the region? What activities?
- Do women face social, cultural, legal or economic constraints to gaining and maintaining access to land titles or credit?
- What support services are currently available for working women? Do they sufficiently meet the needs of women? Are these services accessible to those employed in both the formal and informal sectors? To female heads of households?
- What types of shelter currently exist (privately owned, rental, cooperatives, etc.)? Do they adequately meet the needs of women, including those of female-headed households?
- Are there shelter programs currently in place? Do low-income earners have the same degree of access to these programs as higher income earners?

Planning/Design

- Will women's views be sought in the planning of housing, particularly concerning the provision of services and the location of facilities?
- Will housing be designed to meet the needs of women, especially self-employed women and those in the informal sector?
- Will the needs of women be considered in housing plans, especially in the provision of medical facilities, child care, opportunities to earn income and community buildings that facilitate informal support networks?
- Will proposed market sites be convenient for local women?
- Will the applicant selection process for the shelter program inadvertently give preferential treatment to male-headed families?
- Will women in informal sector occupations be given equal access to the proposed shelter program?
- What income-generating activities will be permitted in the shelter project area?
- Will the following be considered when designing the project: incorporation of appropriate and affordable standards, use of local building materials and building traditions and incorporation of labor-intensive construction methods?

Credit

- Will women receive instruction on how to apply for credit, such as how to complete application forms?
- Will women be informed of the names of lenders, the various types of credit offered and the locations of the lenders?
- Will women be taught the legal implications involved in credit?
- Will women receive instruction on the basic concepts of interest, principal and payment schedules?

Training

- Will women receive instruction on legal matters such as control over land and property deeds?
- Will women be familiarized with legal papers, such as ownership forms?
- Will women receive training in the use and maintenance of construction equipment?
- Will women be informed of the supplies required and the names of suppliers of parts and equipment?
- Will women have adequate access to licenses necessary for construction or for operation of equipment?
- Will women receive information on procedures and regulations for construction?

Information Network

- Is women's access to information concerning housing programs sufficient?
- Could women's groups be trained to assist with communications, motivation, planning and maintenance activities related to the project?
- Will advertisements for the project be designed to reach women? Will they be followed up in an organized manner to encourage women's participation, explain application and compliance procedures and clarify aspects of the project?

Resources

General

Anzorena, S. Jorge, The Participation of the Poor in Housing and Community Development Projects, Asian Institute of Technology, 1980.

Austin, James, E. Confronting Urban Malnutrition, W.B. Staff Occasional Papers, No. 28, John Hopkin University Press, 1975.

Boserup, Ester. La femme face au développement économique, Presses Universitaires de France, Paris, 1983.

Celik, Aliye P., Ximena de la Barra, Housing and Housing Associations, New York, 1975.

Conference of non-governmental organizations in consultative status with U.N. and ECOSOC, Housing and Economic Development, a Women's Perspective, March 1985.

Coyegkeng, Trinidad, C. Developing Communities, the Unicorp Experience, Philippines, 1985.

C.N.U.E.H., Habitat, Les femmes et les établissements humains, Nairobi, 1985.

Dumouchel, Suzanne, Femme, épargne et crédit, Projet Solidarité Canada-Sahel, Canada, 1985.

Laidlaw, Alexander F. Housing You Can Afford, Green Tree Publ. Co., Toronto, 1977.

Lycette, Margaret A. and Jaramillo, Cecilia. Low-Income Housing: A Women's Perspective. International Center for Research on Women. Washington, D.C. April, 1984, p. 3.

Muller, Maria S. Women and Habitat in the Third World, the Urban and Rural Situation, Women and Habitat, Report by the Netherlands Women's Council, 1985.

MATCH International, Management for Change, Workshop Resource Kit, Ontario, 1983.

Netherland Association of University Women. Impact of Urbanization on Women's Welfare, Netherlands, 1983.

Stren, Richard. Project Ecoville Working Paper Number 18, Toronto, March 1985.

U.N.C.H.S. Survey of Slum and Squatter Settlements. Tycooly International Publishing Ltd., Dublin, Ireland, 1982.

U.N.C.H.S. Human Settlements, Policies and Institutions: Issues, Options, Trends and Guidelines. Nairobi, Kenya, 1984.

U.N.C.H.S. Community Participation for Improving Human Settlements, a Reader Composed of Papers Presented to the Workshop on Community Participation, September 17 to October 10, 1982, Kenya, 1983.

UNICEF. Gestion de la prestation de services urbains de base, Mai, 1981.

United Nations. Women and Human Settlements. United Nations Centre for Human Settlements (HABITAT). Nairobi, 1985, p.IV.

U.N. Department of Economic and Social Affairs. A Non-Profit Housing Association, New York, 1975.

U.N. Department of Economic and Social Affairs. Financial Management of Government Housing Project, New York, 1976.

W.H.O., Health Aspects of Human Settlements, Geneva, 1977.

Women, Development and Human Settlements. UNCHS (HABITAT), UN Decade for Women. Newsletter, (nd).

Articles

Ekistic, "Women Housing in the Arab Cultural Context of Tunisia", Number 310, Greece, Jan./Feb., 1985.

Gallo, Paola del. "Rural Migration and Urbanization", Ideas and Action, No. 149, 1982, 6 p.

Hollnsteiner, Mary Racelis Hollnsteiner. "People Power", Les Carnets de L'Enfance, Dossier 40, December 1977.

Scott, Gloria L. "Improving Opportunities for Urban Women", The Urban Edge, Vol. 5, No. 2, February 1981, Washington.

Settlements Information Network Africa, "Women and Settlements: A World Appraisal", Mazingira Institute, October 1985.

U.N.C.H.S., Habitat News, Habitat d'Afrique, French Edition, No. 1, April 1985.

The Urban Edge, "Helping Urban Women: New Ideas and Programs", Vol. 5, No.2, February 1981, Washington.

Bibliography

Monique Letarte. Bibliography on Women and Human Settlements (nd).

Transport is a necessary element in every aspect of economic and social development. Improved infrastructure and transport systems play important roles in:

- putting land into production;
- marketing agricultural and other commodities;
- facilitating access to water, forestry and mineral resources;
- developing industries and expanding trade;
- improving access to health and education facilities (Howe, 1984).

However, in most developing countries, the cost of transporting goods and people is beyond the financial capabilities of a large proportion of the population. Over the years, development organizations have modified transport projects to address this situation, but the problem still persists.

In early infrastructure projects, investments were primarily designed to support the modern sector, particularly export industries. It was presumed that major transport projects would open up a region, stimulate economic development and improve social conditions. By the mid-1960s, analysis of such projects concluded that many of the effects were disappointing and the emphasis began shifting to rural roads (Van der Tak, 1969).

With this shift, planners have tended to focus on smaller infrastructure projects. Yet, transport services are still frequently neglected as it has been assumed that private investments would be stimulated from the increased demand for such services. Studies undertaken by the World Bank have revealed that there are often other political and social constraints, which hinder the development of private initiatives and preclude the development of quality transport services at affordable prices (Carapetis, 1984). Designing infrastructure projects to overcome this problem, to improve the social welfare of rural men and women and to stimulate small farm productivity is now being considered in the context of integrated rural development by donors and recipient countries.

The social aspects of infrastructure and transport development play a vital role in determining the long-term impact of a project. Often it is simply assumed that all people will benefit from a new train, road or bus service, and therefore, there is no reason to consider the benefits in a disaggregated manner. But infrastructure projects alter the physical environment in ways that change the existing growth patterns and economic opportunities in urban and rural societies. It is difficult to predict how people will respond to such modifications without understanding the relationship between social organization and access to and control over resources for specific groups of people in a specific setting (Cook, 1985). Also, it is difficult to evaluate these effects if the relationships are not understood at the project onset. Further, minimizing potential negative effects becomes extremely difficult if the impacts are not identified before the project is implemented.

Transport projects do not affect women in the same manner as men. Women's access to and control over resources, workloads and income-earning opportunities and thus, realization of benefits are generally different from men's. Such factors influence how women will be affected by transport interventions. These issues need to be considered throughout the various stages of project development if women are to be positively affected.

This chapter highlights women's role in the transport sector with special attention to rural road development, major constraints to their participation, potential negative impacts of transport development projects on women, and recommendations for involving women in all stages of project development.

Current situation of women in the transport sector

Transportation projects directly affect women in all the roles they perform: collecting resources; producing crops; marketing; and using shopping, health, educational and other facilities within and outside the village. Studies have shown marked variation in the use of transport modes by different members of the family. Carrying loads on the head is the principal method of transport for women because of limited and inadequate routes and a lack of access to carts and other vehicles.

In Kenya, loaded walking trips account for one in three of all trips taken and 95 per cent of those trips are made by women and children.

Apart from transporting farm products during harvest, water and fuelwood collection are the major daily transport tasks for subsistence farm families (Barwell, 1985).

Women's role in the transport sector can be summarized as follows:

- As transporters of goods for household use: Women transport water and fuelwood for domestic and commercial purposes. Studies have shown that carrying water and fuelwood account for the most time spent and weight transported in all sector activities.

In Tanzania, it was found that women spend approximately 487 hours per year collecting water and 324 hours collecting fuelwood. Men spend about 32 and 20 hours respectively per year (Carr, 1988). In Addis Ababa, it was estimated that 73,400 transporters supply the city with fuelwood. Of these, 90.8 per cent are women (Haile, 1988).

- As marketers of agricultural products and other goods: In many countries, women spend more time marketing goods than men.

In Tanzania, women spend approximately 21 hours per year on trips to markets compared to 9 hours for men. These numbers include marketing trips within and outside the village. (Carr, 1988).

- As users of transport facilities for access within and outside the village.
- As part of the labor force in transport construction: It is often falsely assumed that construction requires hard labor and that women are less capable than men.

In the Kenyan Rural Access Roads Project, women accounted for 30 per cent of the workers (Kenya, 1983). In a CIDA project in Zambia, women joined the road construction crew because they wanted to earn income.

- As transport planners, women have considerable experience in transporting goods for the commercial and domestic sector and have an excellent understanding of the needs and requirements of transport users. This extensive experience, though generally not used, should be incorporated into the project planning process.

Constraints to Women's Participation

The largest constraints confronted by women in the transport sector are the perceptions that there are no specific roles for women in technologically complex projects; and that women automatically benefit from transport projects. Such thinking limits the ability of women to participate in, and benefit from transport projects.

Other problems faced by women include:

- Lack of credit to purchase relatively simple vehicles such as carts, bicycles, or motorcycles with sidecars. This makes it very difficult for women and their families to benefit from improved or new roads.
- Lack of control over project resources. Many examples have been cited where women have been given carts to haul wood and water, but the men have taken them for other uses (Hoskins, 1985).
- Lack of resources to use transport services. A survey of one district in India found that nearly 40 per cent of rural households spend no money on travel or transport. In Kenya, women rarely ride bicycles, while men make considerable use of them. Men also make more trips by public transport as they generally control the cash.
- The traditional focus of transportation projects on large infrastructure projects targeted industrial or commercial users. In most countries, rural tracks and bridges for pedestrians and cyclists, and simple transport aids such as carts are not considered to be a legitimate infrastructure investment. Such a perception ignores the mode of transport used by the majority of rural women.

Potential Negative Impacts of Transport Projects

The literature suggests and nine USAID case studies support the conclusion that transportation projects generally benefit the well-off more than the poor, unless the project is targeted towards poor communities or complementary agricultural and social services focused on the poor are provided simultaneously (USAID, 1982). If women specifically and the poor in general are to be targeted as beneficiaries of infrastructure developments, then extension, credit, and marketing services should be available through the project to encourage their participation. If these groups are not specifically targeted, measures should be adopted to minimize possible negative effects.

The failure to adequately address socio-economic issues during the project planning stage, as well as the lack of supporting or associated projects are two important factors resulting in both women and men being negatively affected by transport projects. Incidences where women have been harmed include (USAID, 1982):

- In Jamaica, women were not a specific concern of a USAID road program, even though 87 per cent of the traders were women. Opportunities for women were reduced because they did not own trucks and were therefore excluded from directly benefiting from new roads.
- In Kenya and elsewhere in Africa, a rural roads evaluation found that road construction caused a shift to cash crops, placing a greater burden on women to provide food for their families.
- Indirect environmental effects, such as deforestation resulting from greater access to forested areas, have led to erosion. Environmental degradation puts added pressure on women who were responsible for supplying the families' food and fuel needs.
- Greater male migration due to newly created roads increased the workload of women, leaving them in charge of cash crops in the Kenya Rural Roads Project area. At the time of evaluation, it was unclear who was undertaking the displaced subsistence cropping activities and what the nutritional impact was.
- In Liberia, where speculative land buying increased the scarcity of land near new roads, women from poor families where males had migrated were the first to be forced up-country to farm other land, away from the benefits that accompanied the new roads.
- Women already overburdened by their household tasks were forced to seek road construction and maintenance work due to the scarcity of other employment opportunities, at the expense of other duties.
- Entry restrictions into rural transport services, fare and freight setting and route selections often result in inefficient rural transport systems and hinder the participation of both men and women. For example, in some areas, permits to operate public transport vehicles such as minibuses are very expensive and only available to a few. The transporters have a virtual monopoly and set the fare rates beyond the means of most users.

Strategies for addressing the involvement of women in planning transport projects

In the numerous transport projects, it is rare for women to have been involved in any of the various stages of project development. However, evaluations have concluded that infrastructure programs that involved local people in the selection, construction and maintenance of transport systems had several advantages over those that did not (USAID, 1982). If women are to be targeted as beneficiaries of transport projects, their transport needs must be understood and they need to be actively involved throughout the project development process. The following general strategies should be considered when undertaking transport projects:

- An assessment of the real transport and mobility needs of women in terms of number, frequency and duration of trips rather than trips only by motor vehicle.
- The promotion of basic, traditional travel aids and transport means as a method of meeting the transport needs of women.
- The acceptance of lower level infrastructure improvements such as trails and tracks as legitimate parts of investment projects (Carapetis, 1984).
- The implementation of complementary social and agricultural programs designed to meet the specific needs of women.
- The promotion of credit so women can become active users of the transportation system.

Participation of Women in Project Planning

Women should be regarded as planners, constructors, and users of transport systems. Yet, women have typically been assumed to be only beneficiaries of transport projects. Engineers have designed technologies without consulting women, neglecting their specific needs and ignoring their experience in the sector. In order for women to assume these roles, emphasis must be placed on their participation from the project's inception. The following issues need to be addressed when designing strategies for including the consultation and participation of women in the transport sector:

- Will local women from various socio-economic backgrounds actively participate in the planning and designing of the project?
- Have the project planners clearly stated that women will be involved as agents and as beneficiaries in the project? Is this intent specified throughout the project planning documents?
- Will special measures be taken to overcome constraints that have been identified as preventing women from realizing intended project benefits?

Examples of projects where local participation of women and men was crucial to the success of the project include (USAID, 1982):

> In the Kenya Rural Access Roads Project, local committees helped select routes and both women and men worked under contract to construct labor-based quality roads at a modest cost when compared to other equipment-based projects.
>
> In Colombia, village committees applied for construction assistance and carried out the work themselves. The participants learned new skills which they applied to home and farm improvements, and their participation strengthened internal stability and social organization (USAID, 1982).
>
> A USAID evaluation of a road project in Liberia concluded that the negative impacts on land tenure and income distribution might have been diminished if more emphasis had been placed on village organizations and broadening local institutions through local participation.

Information Base

In order for project planners to involve women in transport projects, adequately consider the mobility needs of the target population, and evaluate the impacts of the proposed systems, baseline data surveys or needs assessments must be carried out. Even though data is rarely available, consultations with women from different economic and ethnic backgrounds can elicit much of the needed information. Data needs will vary according to the specifics of a particular project. However, the following are the type of issues which should be considered before the project begins:

Data Collection Considerations

- Are data collected and analyzed early enough to ensure that necessary adjustments can be made during the course of the project?
- If convenient to do so, are data analyzed so as to provide guidance for other transport projects?
- Are women involved in designing, collecting and interpreting data?

General Considerations

- What tasks are currently undertaken by the target population (women, men, and children) that could be affected by the proposed transportation project?
- What is the division of time and labor, by gender and age, to accomplish these tasks? What is the relationship between men and women in carrying out these tasks? What proportion of women's time is spent on transportation-related activities?
- Are there legal, economic, social or cultural constraints to women's participation in transport projects? Will these constraints affect the realization of benefits by women?
- What are the distributions of farm size and land tenure types, as well as the patterns of settlement and migration? This type of information is useful in analyzing displacement and migration patterns.

Transport-Related Considerations

- Have women been consulted as to whether the location of the transportation infrastructure system will positively or negatively affect them in marketing and other informal sector income-generating activities?
- Do women feel the transportation project will reduce the time spent hauling fuel, water, agricultural produce, etc.? Is this reduction in time a desired outcome by women or does it infringe upon opportunities for social contact?
- What is the appropriate technology for carrying out transportation improvements and how will it affect employment of women?
- Who owns the transport vehicles currently used in the project area and who will benefit from the savings in transport costs?
- Who is providing these transport services now and are they likely to be displaced as a result of the project?
- Will the transportation system require payment, and do women in the project area feel they will generally be able to afford the cost?
- Have women been consulted concerning the cultural appropriateness of the transportation system for use by women (e.g. women riding bicycles, women travelling alone by train)?
- Will the transportation system improve women's access to employment, education and recreation opportunities, and to health and community services?

The importance of collecting baseline information is demonstrated in the following examples:

> The most fundamental weakness in the Feeder Road Project - a weakness that also has serious consequences for the impact of the project on women - is the lack of social impact study prior to implementation, and indeed formulation of the project (Hurlich, 1986).
>
> In Mali, a socio-economic study determined that women would no longer be able to afford to use the train to transport goods after improvements necessitated a fare increase.

Access to and Control over Resources

Transport planners need to consider how a proposed project will affect women's access to and control over resources, as greater access to goods and services through improved transportation systems can negatively affect their income-earning potential and their workload. For example, women can be displaced as producers and marketers by the import of cheaper manufactured goods, or by middlemen who buy directly at the farmgate. Altered transportation routes may bypass traditional roadside markets and other formal or informal service industries. Also, improved transportation may alter agricultural cropping patterns, increasing the use of technology and more skilled full-time labor, with men often displacing women. The following questions should be addressed when considering the effect of a transportation project on women's control over resources:

- Who controls the cash in the family and do women have access to money for transport services? Is credit necessary for women to use these services?
- How do women compare to men in terms of access to and control over transport-related resources: vehicles, bicycles, carts?
- Should credit for transport aids be made available to women through the project? Do collateral requirements, transaction costs and repayment schedules exclude women from access to formal credit?
- Will the proposed transportation project alter women's role in the marketing of goods and other informal income-generating activities? Will there be an extension of cash crops or other industries and will this expansion displace women from their existing roles?
- Will women receive alternative employment training if the project displaces them from their current income-earning activities?
- Who will be employed in road work and who controls access to these jobs? Will women be offered an equal opportunity to participate?

Project Implementation

Transport projects can respond to the needs of women by adjusting the focus of project activities in terms of location, timing and support services. Special efforts or complementary programs may be necessary to ensure the realization of intended benefits to women. In order to guarantee that women in the project area are being reached, internal reporting should be carried out during project implementation. Such feedback should indicate the relative proportion of project resources that are going to men, women and each socio-economic group.

When implementing transportation projects that focus on women's participation, credit services and extension/training should be included. Project planners should assess existing credit systems and determine the appropriateness of credit for transportation aids. A number of factors tend to restrict women's access to formal credit programs: collateral requirements, transaction costs, and repayment schedules. Transport aids, often relatively small investments, can release women from non-income activities such as fuelwood and water hauling, enabling them to participate in income-generating activities. Studies in India have found that following the introduction of mules, women began earning income from tomato growing and knitting (Carr, 1986).

If women are to benefit from extension and training programs, those programs must be aimed at women. Women extension agents should be employed by the project and actively recruited to participate in training programs. Male extension agents should be trained to extend information to women. The following chart suggests ways of improving women's participation in and benefits from transport projects.

Project activities and actions

Project activity	Action
Project Management	– hire professional women to assume managerial and technical positions; – provide equal opportunities for women to participate in training sessions, including study tours.
Construction/Maintenance	– ensure that women are informed about employment opportunities and are not bypassed by information channels; – ensure that women are fairly represented in the work force;

Project activity	Action
	– ensure that women are remunerated equally with men; – ensure that women are well represented in training programs; – organize construction/ maintenance work so it does not conflict with agricultural tasks.
Project Components such as:	
Credit Schemes	– improve women's access to credit; – through women's cooperatives, provide provisions for credit assistance for transport aids.
Marketing Assistance	– facilitate women's access to markets and improve marketing/business skills.
Complementary Projects	– train and hire women extension agents appropriate to the project sector; – train male agents to extend technical information to women.

Project Monitoring and Evaluation

Transportation projects have immediate consequences which are expected by project planners and long-term impacts which are generally unforeseen, both positive and negative. Monitoring and evaluating those impacts can be extremely beneficial for modifying ongoing projects and planning future projects. If a project's impact on women is to be evaluated, socio-economic data must be obtained at the onset of the project for comparison at mid-term and at the end of the project. The effects will also be easier to evaluate if WID objectives have been clearly stated at the beginning of the projects and if targets have been established to measure progress.

The evaluation should examine the effects of the project in terms of what women have perceived themselves to have gained as well as lost. The following are issues which should be addressed when evaluating transport projects' impact on women:

- Have women gained or lost with respect to: land ownership or access to land in their own right; assistance from other household members due to migration; control over the sale of produce; direct opportunities for cash income?
- What sources of food have expanded or diminished, and what has been the effect on diet?
- Has there been a reallocation of women's work load or time and have the changes been positive or negative?
- How many women were employed by the project relative to men and in what capacity? Has there been a decrease in income gaps between women and men and across different categories of persons both within and outside the targeted population?
- Did women provide input to the planning of the project and were their opinions and experiences actually incorporated into the project?
- Were women specified as a target group and were female heads of households given specific mention?

Related issues

Environmental Concerns

Transport projects are undertaken to promote economic growth which will in turn improve the social and economic well-being of individuals within the targeted area. Increased access to inputs, expertise, facilities and markets tends to benefit a variety of sectors. However, costs on the rural poor tend to be largely social and environmental, with rural women bearing a large portion of the consequences.

Roads create access to areas that have not been previously settled or exploited and facilitate activities that have long- term environmental consequences. The major environmental threats are deforestation, due to increased wood and land needs and lack of control over forest resources; and poor soil management, due to the desire for higher yields or poor knowledge of the soils in the newly accessed area. The result is soil erosion and a decline in crop yields which, in turn, tends to increase the pressure on already over-used resources. Brazil is most often cited as an example of a country that has experienced massive deforestation due to improved access to the forests, but many countries have had or are experiencing similar fates. Slash and burn agriculture techniques in newly accessed areas are one of the primary causes of deforestation of the tropical forest in Zaire. Increased exploitation of timber, fuelwood and charcoal has accompanied road building in Brazil, the Philippines, Thailand, Malaysia, Haiti, Kenya and Sierra Leone (USAID, 1982).

Such activities bring temporary economic relief to some rural poor, but the long-term impacts include fuelwood scarcity, silted water sources, and decreased crop yields. As suppliers of water, fuel and food for the family, the greatest burden of environmental degradation is placed on women. They not only face heavier workloads in terms of distance and time spent transporting these goods, but they also must try to prevent a decline in their families' general standard of living by maintaining crop production or engaging in outside income-generating employment.

Resources

Barwell, I.J., et al. Rural Transport in Developing Countries. Intermediate Technology Publications, London. 1985.

Carapetis, S. et al. The Supply and Quality of Rural Transport Services in Developing Countries; A Comparative Review. World Bank Staff Working Paper No. 654, Washington, D.C.. 1984.

Carr, Marilyn and Ruby Sandhu. Women, Technology and Rural Productivity. United Nations Development Fund for Women, New York. 1988.

Cook, Cynthia C. "Social Analysis in Rural Road Projects" in Putting People First; Sociological Variables in Rural Development. Michael Cernea, editor. World Bank, Washington, D.C.. 1985.

Devres, Inc. Socio-Economic and Environmental Impacts of Low-Volume Rural Roads — A Review of the Literature. USAID Program Evaluation Discussion Paper No. 7, Washington, D.C.. 1980.

Halcrow Fox and Associates. Etude d'évaluation de l'impact des routes rurales, Draft Report World Bank, Washington D.C.. 1980.

Haile, Fekerte. "Women Fuelwood Carriers and the Supply of Household Energy in Addis Ababa". Presented at Meeting on "Women and Natural Resource Management in Africa". 1988.

Howe, John and Peter Richards, editors. Rural Roads and Poverty Alleviation. Intermediate Technology Publications, London. 1984.

Hurlich, Susan. Women in Zambia. Prepared for CIDA, Hull. 1986.

"Kenya Rural Access Road Program: A Case Study". World Bank Office of the Advisor on Women in Development, Washington, D.C.. 1983.

Peters, Freida. "Women in Development Issues related to the Ghana Northern Regional Rural Integrated Development Programme" Project Preparation Phase 2. Prepared for CIDA, Hull. 1986.

"Rural Roads Evaluation Summary Report". USAID Program Evaluation Report No. 5, USAID, Washington, D.C. 1982.

Weekes-Vagliani, Winifred. The Integration of Women in Development Projects. OECD Development Center, Paris. 1985.

Women and water supply and sanitation programs

Women are the primary haulers and users of water for domestic consumption. They are also the traditional guardians of family health and the teachers of sanitation, hygiene, and disease prevention to their families and immediate communities. Therefore, women have a vested interest in the establishment of safe and reliable water and sanitation systems and a strong incentive to ensure that the systems are maintained.

Design considerations such as access are of greater significance to women than to men. For example, the location of a water source will determine the amount of time required to fetch and haul water; social and religious restrictions may exist which prohibit men and women from using the same facilities. A lack of awareness of these and other considerations can lead to poorly designed water and sanitation projects, which may end in the rejection of the new or improved system.

As water users, women need sufficient available water both for domestic purposes and for use in their agricultural plots or home gardens (which generate a large portion of family food). Water and sanitation projects should train women in the actual construction, operation and long-term maintenance of local facilities.

Involving local women in the management and decision-making process when planning water and sanitation projects and considering their roles as both domestic and agricultural water users is critical to the success of projects. Providing basic information on sanitation to women in the development of appropriate and locally sustainable technologies can have a tremendous impact on the health of women and their families. (For additional perspectives, see the Health and the Agriculture Sectors).

Current situation of women in the water sector

- As domestic managers, women decide where and when to collect water. They also determine how much to collect and how it is used.
- Women play an important role in maintaining and managing community water supplies and sanitary facilities.
- Women teach young children and supervise their use of sanitary facilities.
- Women enforce hygiene in the family and the community.

Constraints Encountered by Women in the Water Sector

A number of cultural and social factors impede the full participation of women in water projects. These include:

- Women's work in carrying water and maintaining sanitation facilities is often not given an economic value.
- Women are often excluded from the planning and implementation of water and sanitation projects in their communities. When community committees are established, women are often under-represented.

It has been reported that in Colombia, representation of women on nearly 3,500 community development committees in two regions was 8 per cent and 17 per cent. Absence of women in village bodies is also reported for Northern Ghana, Thailand, India, and Kenya (Perrett, 1985).

- Water supply and sanitation technologies often do not take into consideration women's views, level of know-how and cultural context.
- Maintenance of the systems is frequently insufficient and women lack the knowledge needed to repair the system.

The lack of consultation of all the members of a target group (women and men) leads to one-sided decisions by project staff, contractors or higher level authorities, leading to improper design, technology or location of new services.

A 1976 study revealed that nearly half of the improved water supply and sanitation facilities were unused or inoperative within a few years. (Inter-Agency Task Force on Women and Water)

Frequently, development planners and sector specialists have failed to recognize or consider local customs, taboos or restrictions. This lack of cultural sensitivity has prevented women from benefiting from newly installed services.

In Swaziland, a local taboo prescribed that only men could handle oxen; so when men were not around to operate the new oxen pumps, women had to carry water from long distances.

Other constraints that impede full participation of women in sector development work are:

- Gender issues, the participation of women, and the training of women are still treated as a separate component in isolation from the general efforts in water supply and sanitation activities.
- Women are often not aware of the important role they play in the provision of adequate water supply and sanitation.
- Water supply and sanitation programs often lack a complementary component on health and hygiene practices.

Potential Negative Effects of Water Supply and Sanitation Projects

The lack of consultation with the local people (women and men) from various socio-economic backgrounds can result in negative effects on certain segments of the population (Wijk-Sijbesma, 1985). Some of these effects are:

- New facilities may mean more transport work for women.
- Minority groups might not be allowed to share communal facilities.
- Cultural constraints may not permit the sharing of household latrines by men and women.
- Lack of privacy may prevent women from using the facilities.
- Women may be denied access to public taps, wells or latrines where seclusion of women is a cultural norm.
- Problems with taste, color, and cooking time can interfere with the use of new sources of drinking water.
- The location of facilities may be inconvenient for poorer households often located on the outskirts and headed by women.
- The operation of new equipment or facilities may not be suitable for children, pregnant women or old women.
- Local people (women and men) who have not participated in the planning and construction of facilities are often not interested in their maintenance. Some even continue to use the traditional facilities.

Strategies for addressing the involvement of women in water/sanitation projects

Planning: Women and Community Participation

Effective community participation is based on consultation with all users of the project. However, women are often left out of the consultation phase, with subsequent consequences for other phases of the project.

A number of practical measures should be adopted to ensure women are involved when the community is consulted. These measures could include the following:

- The program planners should clearly elaborate and define (in operational terms) in the program documents the involvement of women in the water supply and sanitation project.
- A budget must be prepared taking into account time, funds and personnel required for ensuring full community participation.
- A dialogue with the local people must be initiated so that the position and participation of women in the project is fully appreciated.
- Criteria for the female/male composition of the project committee must be prepared.
- The time and location of meetings and training activities should take into account women's family responsibilities, so that the hours of the new activities will not be in conflict with women's expected obligations within the family.
- A strategy to ensure the flow of information on project activities must be developed.
- The active participation of women in discussions and decisions must be encouraged.
- The project should include female staff at all levels of participation from outreach to managerial activities.
- Grass-roots organizations, local groups, associations and cooperatives should be trained to facilitate and legitimize women's participation in the sector.

Data Collection

The following observations have been made in reference to the methods of gathering socio-cultural data on water and sanitation projects:

- Information must come from women, since women have day-to-day experience in family water use and hygiene habits;
- In the selection of interviewers, both men and women from the community must be considered;
- In some cultures, it is better to interview men and women separately, so that women can express their views more freely. Women should be interviewed by women;
- Participatory research, where the villagers themselves gather and analyze the data, provides them with firsthand insight into their own problems. In some cases this may be the only way to get accurate facts.

An experiment in the Philippines found that the training of community members to carry out their own socio-economic study led to lower costs and the results were as reliable as those carried out by the agency staff.

In Honduras a woman said "We did not want an evaluation that we could not understand and that would not have helped us to understand our problem — like just answering questionnaires" (Wijk-Sijbesma, 1985).

Communication Support

Communication support refers to the information, motivation and education activities designed to reach the people whom the project intends to benefit.

National planners and sector specialists may have limited interest in communication support; they may perceive this area as a method to "sell" an already designed program. But effective communication support can ensure the success of a project.

Well-prepared communication support activities will ensure that the expressed needs and preferences of the community (women and men) will be reflected in all aspects of the project, such as:

- project scope and objectives;
- project staff requirements;
- project location;
- technology and/or materials used;
- composition of committees;
- selection of trainees;
- areas of training.

The complexity of the communication support needed for a project will vary according to the size of the target group, their place of residence, their level of knowledge and interest in the project and their understanding of the project's benefits.

The following are basic elements of a "communication support package":

- community promoters;
- field workers;
- mass media;
- model of technology to be introduced;
- local groups (NGOs, churches, women's organizations, associations, cooperatives, clubs);
- written material - brochures, posters, pamphlets - (Perrett, 1983).

Not all of these outreach mechanisms will reach women. It is necessary to consult with the community, and women in particular, on the most effective methods of information.

It is also important to prepare local groups to effectively reach women. Some groups might need to be educated about the potential role and contribution of women in the project.

Well-planned project communication support activities should produce the following results:

- facilitate needs assessment and secure its accuracy;
- ensure provision of suitable technology that will meet planners' and users' needs;
- generate good-will among the community and a sense that it is "their project";
- initiate a "two-way" flow of information (from users to planners and from planners to users).

The Design and Choice of Technology

Women can provide critical information necessary for the most appropriate design of water facilities. Women are usually the best source for information about laundering, the watering of animals, hand washing and using latrines. It is essential to find out about local preferences through participatory research.

Failure to consult with those affected by water and sanitation projects may lead to unnecessary higher costs and inappropriate choices of technology.

- Technologies for improving water supply and sanitation often fail because they are inappropriate, too complicated or difficult to operate or maintain;
- To be accepted within a community, new technology must:
  - be needed and wanted by the local women and men,
  - be well made and easy to maintain,
  - be low priced, if the intended beneficiaries are poor and have to buy it,
  - not represent too great a leap from existing practices,
  - use prototypes adapted to local circumstances;
- Acceptability of the technology must be determined at all stages of the project cycle;
- Suitable women and men should be trained in the new technology for management, maintenance and repairs.

Women's preferences for one type of technology over another can be crucial to the project's success or failure. What women think and feel will affect their subsequent use and maintenance of facilities.

Implementation: Construction, Operations, and Administration

Construction

A review of the literature shows womens' contribution to the construction of water supply and sanitation projects:

- In Malawi, women provide up to 70 per cent of the labor of piped water schemes.
- In Thailand, women mix concrete, pour latrine bowls and cast rainwater jars.
- In Asia, women work as paid construction workers.
- In Mozambique and Tonga, latrine slabs are made and sold by women's cooperatives.

Planners should never assume that women can or should contribute voluntary labor during the construction of facilities or help to finance the project with their own earnings unless this is clearly linked to a direct benefit for them and does not conflict with their other responsibilities. The following questions should be addressed before requesting voluntary contributions from women:

- Would local men work for such projects without remuneration?
- How will the voluntary labor requested from women add to their already double workload of production and household responsibilities?
- Would the project ask for voluntary labor from women who have little or no financial resources such as women heads of households and women living in slum areas of a city?
- Would the project ask for financial contributions from women whose only income was generated by growing small amounts of food crops or by selling hand-made goods?
- Would the project require the financial contribution of women, where there is evidence to suggest that the bulk of their income goes to meet the basic necessities of their families?
- How will the project ensure that women who provide free or inexpensive labor receive direct benefits from the project? There are cases where women participated actively in land improvement projects, but were not included when the land was divided and given to the males of the community.

Operations

Research has shown that operation, maintenance and repair components of projects have in many cases been poorly planned, leading to consequent neglect of the installations and eventual decline or failure of the programs.

The design of an appropriate maintenance program must be specific to the community in which it will be implemented. Villagers must be aware of their responsibilities, and have the tools and skills needed to maintain their systems. They must be informed

where to report any damages or repairs needed.

The engineer, the management specialist, the financial analyst and the project officers working on low-cost water supply or sanitation projects must be aware of the importance of an effective two-way communication support system that must be established with the community very early in the planning phase of the project.

The following examples show how women, given the necessary training and support, can organize themselves to operate and maintain water and sanitation facilities (Wijk-Sijbesma, 1985):

- In Honduras, women from female-headed households are hired by the committee on a rotating basis to be in charge of the standpipes, to collect fees for water and to keep the water sites clean.
- In Angola, women have been recruited as water source monitors.
- In Panama, women trained to participate in the piped water system have become local leaders and manage the collection process.
- In Zimbabwe, the women themselves organize the use and upkeep of the communal water point.
- In an urban slum in Zambia, the women's branch of the political party organizes the women on an ad hoc basis to improve the drainage of public taps.
- In Malawi, tap committees composed mainly of women have been established.

Administration and Management

Women have a strong role to play as project managers in the water supply and sanitation sector. Their involvement at this level is often circumscribed by social and cultural factors which prevent participation in decision making. These factors include:

- Women's participation is often not perceived as a factor contributing to the functioning of the total system;
- Women are often not considered for managerial or technical training opportunities.

Women's participation in the administration and managerial aspects of the project not only secures success, but also ensures that specific objectives are met (Wijk-Sijbesma, 1985):

- Women make special efforts to solve local problems, including fee collection and fund raising for repairs.
- In certain cultures, male collectors can not visit the houses when husbands are absent.
- Women tend to be trusted more with community funds, hence they are often appointed as treasurers.
- Women often solve conflict inside a divided community.

Monitoring and Evaluation

The following are types of information that can help to establish whether women have been involved and the extent of their involvement in a project:

- What is the percentage of women participating in the project and what role do they play?
- Did women participate in the collection and analysis of data for the feasibility study or needs assessment?
- Were the recommendations of women used?
- Were women involved in the construction of facilities? What was the nature of their involvement? How does their involvement compare to the men's involvement (paid/unpaid labor, skilled/unskilled labor, trained/untrained)?
- What is the training component of the project? How many women have benefited from this opportunity? Which socio-economic groups of women have benefited?
- Have women's groups been approached to assist with information, motivation, reinforcement, and/or training activities?
- Do women receive adequate information and access to credit needed to participate in projects?
- What provisions (labor and credit) are made for female headed households?

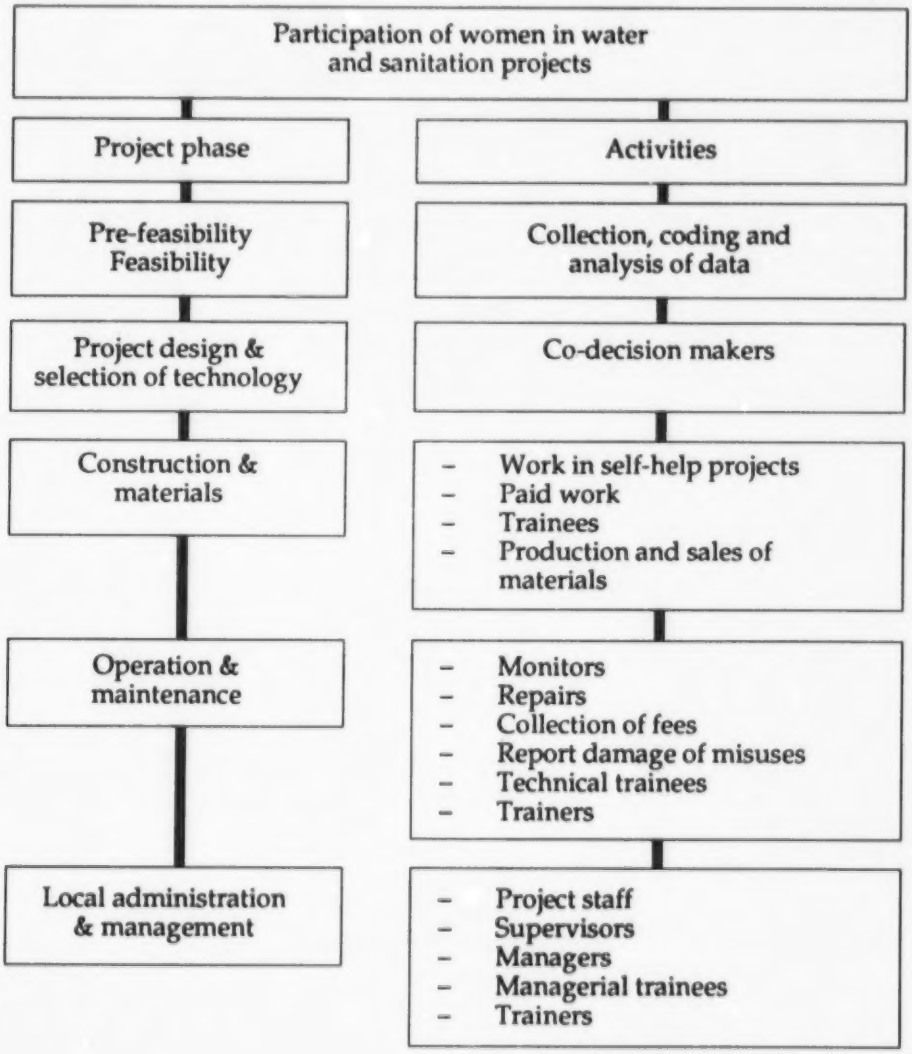
Training Activities

To ensure that women will be included in training activities for construction, maintenance and management of water and sanitation projects, the following should be considered:

- Provisions should be made so that a percentage of women are recruited for training.
- Special measures should be taken in regard to the training hours, location and duration. Family responsibilities often prevent women from attending educational activities for extended periods of time far from their home.
- Provisions should be made to ensure information on training opportunities will reach various socio-economic groups of women and that all qualified applicants have the same chance to be selected.

Participation summary

The following diagram illustrates the levels of participation of women in a project:



Women will only be involved in various project activities (data collection, selection of technology, project site, etc.) when they have the support of men and women in higher levels from field staff to managers and decision-makers at the regional and national level.

Project checklist

Planning

- Are there legal, economic, social or cultural barriers to women's participation in the planning or implementation of water and sanitation projects?
- What roles do local women play in the community's social and economic infrastructure?
- What roles do women play in relation to the preservation of family health, the provision of domestic and agricultural water supplies and the preservation of community environmental sanitation?
- Do women and men feel a need for the project? What are their respective priorities and expectations?
- Is the community (men and women) willing and able to participate fully in the project, including socio-economically weaker groups, such as women heads of households?
- Is the design acceptable for all women in terms of:
  - water quality, quantity and reliability;
  - adequate access;
  - appropriate technology and maintenance;
  - cultural acceptability.

Monitoring and evaluation

- Are there women on existing village water committees or their equivalent? If so, what is the percentage of women and what role do they play?
- Are women consulted on the choice of technology, the selection of well sites or pump sites? Are they consulted on additional facilities such as washing, bathing facilities?
- Are women given training in maintenance of water supply schemes? If so, what is the percentage of women trained as preventive maintenance workers/caretakers/managers of the facilities?
- Are women trained as health/hygiene educators? If so, what is the percentage of women trained, as compared to men? What is the relative impact made by trained men and women? A further survey could be done to check the turn-over rate of trained women as compared to trained men.
- Do women derive economic benefits from saved time? How do women use the saved time for income-generating activities such as: sewing; handicrafts; vegetable growing; for greater involvement in the local market system; for education and training; or learning new skills?

- Do women achieve health improvements? Do they have more time to take care of children; more water for washing, bathing, personal hygiene; more knowledge about hygiene, water-related diseases, food preparation, personal hygiene, environmental cleanliness, better disposal of wastes, etc.
- Do women earn income during the construction of the project?
- Do women learn new skills?

Credit

- Is access to credit necessary for increased female participation in the sector, and do women have access?

Training

- Will women be trained in the actual construction, operation and long-term maintenance of the system?
- Will a system for potable water be complemented with training for men and women on health education, so as to maximize the benefits of clean water?
- Will women be informed of the supplies required and the names of suppliers of parts and equipment?
- Will women receive instruction on legal matters such as water use rights or land rights related to water, if applicable?

Information Network

- Do women receive adequate information concerning training opportunities and/or access to credit in this sector?
- Have women's groups been approached to assist with information, motivation, reinforcement, and/or maintenance activities?
- Is women's access to information about water and sanitation activities sufficient? Does the choice of channels through which information is disseminated inadvertently exclude or bypass women?
- Will project advertisements be developed that are appealing to women as well as men? Will advertisements be followed up in an organized manner to encourage women's participation, explain procedures and clarify aspects of the program/project?

Resources

Books and Documents

Chauhan, Sumi Krishna. Who Puts the Water in the Taps? Community Participation in Third World Drinking Water Sanitation and Health. An Earthscan Paperbook. International Institute for Environment and Development, London, 1983.

CIDA Water Sector. Social Development and Role of Women. Programming Mission. Indonesia. Final Report. December, 1986.

Doucet, Andrea. Women and Water: Experiences from Latin America. Report to CIDA. November, 1986.

IDRC. Women's Issues in Water and Sanitation. Attempts to Address an Age-Old Challenge. Canada 1985. (Disponible en français et espagnol).

Inter-Agency Task Force on Women and Water. Strategies for Enhancing Women's Participation in Water Supply and Sanitation Activities. New York, USA, IDWSSD Steering Committee for Cooperative Action, (no date).

OCDE/CAD. La participation des femmes, facteurs de réussite des projets intéressant le secteur de l'eau de l'assainissement. Paris, Mai 1985.

Perrett, Heli. Involving Women in Sanitation Projects. Technology Advisory Group (TAG), UNDP/World Bank, 1985.

Perrett, Heli. Planning of Communication Support (Information, Motivation and Education) in Sanitation Projects and Programs. Technology Advisory Group (TAG), UNDP/World Bank, 1983.

Stanbury, Pamela. Women and Water: Effects of Irrigation Development in a North India Village. University of Arizona. February, 1984. Working Paper No. 50, 29 p. (MATCH, Ottawa).

UNDP. Participation of Women in Water Supply and Sanitation: Roles and Realities. Technical Paper 22. The Hague, Netherlands, 1985.

UNDP/PROWWESS. Alternative Strategies for Involving Rural Women in the Water Decade. Participatory Training-of-Trainers Workshop. Kenya, 1986.

The UN International Research and Training Institute for the Advancement of Women (INSTRAW). Women and the International Drinking Water Supply and Sanitation Decade. Sto. Domingo, Dominican Republic (no date).

Wijk-Sijbesma, Christine. Participation of Women in Water Supply and Sanitation: Roles and Responsibilities. Technical Paper 22, International Reference Centre (IRC) for Community Water Supply and Sanitation. The Hague, The Netherlands, 1985.

Audio-Visuals

"Pompe Koom: A sense of Commitment". CIDA (Briefing Center, 35 m., English).

Training Materials for Low-Cost Water Supply and Sanitation. World Bank (Each module comprises 20 m. slide-sound show, instructors' notes and participants' notes. Available in the CIDA Briefing Center).

Women in micro – and small–scale enterprises

Micro- and small-scale enterprises make up a large part of enterprises in developing countries and are increasingly valued by governments and donor agencies as units of production and generators of employment. While few precise definitions exist, this form of production can be characterized as being relatively small-scale, family-owned, reliant on local raw materials, using indigenous, labor-intensive technology and operating in unregulated markets (USAID, 1983).

The scope of activities in the informal sector is varied. For women with family responsibilities and few formal skills, the informal sector is often their only source of income.

Women are most commonly found in the following occupations:

a. Small-scale vendors, traders in:
- foodstuffs;
- cloth, clothing;
- jewellery;
- handicrafts;
- raw materials;
- livestock.

b. Home-based producers/cottage industries, particularly:
- garment making;
- food preparation/preservation;
- handicrafts;
- other light manufacturing.

c. Service workers/laborers, e.g.:
- carriers;
- construction workers;
- restaurant and hotel workers;
- bookkeepers and accounting;
- cleaning, laundering, cooking.

d. Activities in primary industry, e.g.:
- agriculture;
- fisheries;
- dairy/livestock production;
- poultry/egg production;
- bee-keeping.

Neglect of the informal sector in the past has meant that information, credit, extension services, regulations and human resource development activities have not been targetted directly at this economic sphere in general, nor at women within it.

This past oversight is being corrected slowly by governments and donor agencies by focussing increasingly on facilitating access to credit, technical training and management assistance. Other efforts include giving support to credit unions, cooperatives, business schools, vocational schools and trade associations to supply relevant skills training or upgrading, marketing information, apprenticeship programs and other non-formal educational programs for those involved in small business.

Current situation of women in the micro – and small – scale enterprise sector

While informal work has always existed, the formal economy's inability to absorb the rapidly-growing populations within developing countries has meant that surplus labor has been channeled into informal sector activities. Cities, such as Bombay and Lima, have between 53-69 per cent of their working populations in the informal sector. In most countries, women play a large role in these activities.

In Thailand, recent studies have confirmed the belief that small-scale enterprises play crucial roles in generating income and employment for the poor, and for women in particular (Suwana-adth, 1987).

In Tanzania, within the past five years, women have started income-generating activities on a scale previously not seen among urban women (Swantz and Tripp, 1987).

In Peru, studies made on women's participation in the labor market indicate that women's access to paid jobs is mainly through the informal sector (Pinilla, 1987).

Over 80 per cent of the owners of tie-dye (gara) small-scale enterprises in Sierra Leone are women (Dulansey and Austin, nd).

Factors in planning entrepreneurship projects

- Failure to recognize that women are overworked rather than underemployed can result in the collapse of projects aimed at increasing the productivity of women's work (Carr, 1987).
- Unless it can be ensured that the women who produce the goods will have control over the management and the marketing, and unless there is a sure market, the project should not be undertaken.
- There is an urgent need to change the mental attitude of women micro-entrepreneurs to consider administrative training as a major factor of business success or failure (Chacon, 1987).
- The competence of the "facilitator" - the catalyst between credit and its delivery - becomes crucial to project-initiated schemes.
- Good business expansion prospects tend to be postponed due to family considerations and convenience of home-based operations (particularly for young married women) (Perera, 1987).
- Enterprise-oriented projects often fail in their economic goals which are normally replaced by welfare and community development objectives.
- It is often forgotten that the fundamental reason for promoting entrepreneurship is to help women become economically independent (Awori, nd).
- Whatever organized forms are developed among women, they will have to start from the women themselves and not from some outside notion of what forms of organization they "ought" to have (Swantz and Tripp, 1987).

Approaches to increase the productivity in women's enterprises

Numerous studies point out that the return on women's work is usually very low and that pressure from large, modern industries is threatening to drive their return even lower. Therefore, three approaches are suggested to increase the productivity of women's labor in the micro- and small-scale enterprises sector (Carr, 1987):

- Introduction of improved technologies and the provision of supporting services.

In Ghana, the introduction of fish-smoking ovens has helped thousands of women to double or triple the amount they can process in a day and thus increase their income and profits. It is acknowledged that the secret of the success of this improved technology is that the women, who were the intended users, were fully involved in the process of its design and development.

- Increase women's access - through cooperatives, credit, training or technological change - to micro- or small-scale enterprises which are now unavailable.

- Women's existing skills can be drawn upon to produce new products which have a higher market potential than their traditional products.

In Bangladesh, several landless women have now purchased their own diesel rice mill by forming into groups of 25 and acquiring loans and back-up advice and assistance from the Grameen Bank.

In Sri Lanka, women potters have been helped to diversify their range of products to include ceramic stoves for which there is an increasing demand. Similarly, women potters in Ethiopia have been assisted to increase returns from their failing traditional industries by turning to the production of bricks, irrigation pipes and other infrastructural commodities.

Project components

Credit Resources

The lack of capital has been identified as one of the fundamental problems faced by small entrepreneurs. The constraints associated with women's access to credit have numerous implications for the development of their business activities (e.g., it limits the scope of business, prevents them from hiring employees and maintains the use of obsolete technology).

To improve the present situation, recent literature suggests various specific actions that can be taken by financial institutions in charge of credit resources and by the informal sector itself (Pinilla, 1987).

Financial Institutions

- New and flexible criteria for the selection of borrowers.
- More appropriate credit structures in terms of loan amounts and amortization periods.
- New policies on collateral, transaction costs, service fees, hours and locations for micro- and small-scale entrepreneurs.
- Simplification of credit application procedures (including turnaround time for loan decisions).
- Development of mechanisms to reach and facilitate the access of the informal business sector to available credit resources, e.g.:
  - revolving funds,
  - guaranteed loans,
  - group of co-signers (these groups are comprised of five to six self-selected members. Each group receives one loan which is divided among its members. All members serve as guarantors of the loan.),
  - loan extension services,
  - training programs for borrowers.

Informal Business Women

- Familiarize themselves with the credit opportunities offered by the formal financial sector and the mechanisms through which they channel the resources.
- Improve the administrative techniques used in daily management of the business.
- Meet minimum requirements and standards established by financial institutions.

Training

Training programs for women entrepreneurs should be tailored to each group of trainees, so that the content of the training will respond to the daily reality of their business and their own absorptive capacity. A recent overview of training programs for women engaged in economic activities presents the following recommendations for training (Awori, nd):

Training for Low-Income Women's Groups

- Women require training in basic business skills, technical skills and family life education.
- Necessary business skills include record keeping, costing and pricing, marketing, management accounting, legal requirements for starting a business, separating personal/family budgets and business budgets and loan administration, all in very simplified and elementary forms.

Training for Women Entrepreneurs

The Eastern and Southern African Management Institute has developed a program that helps to make women entrepreneurs aware of gender-specific issues in a direct manner. This program includes:

- The role of the small-scale entrepreneur in economic development;
- Environmental constraints of women entrepreneurs;
- Opportunities for training and technical assistance;
- Steps in setting up a small-scale enterprise;
- Essential qualities of entrepreneurship;
- General management, with emphasis on planning, interpersonal skills, production, accounting and record keeping.

Training of Trainers

It is also pointed out that, in some countries, trainers are still recruited from a variety of backgrounds and that few have any experience in operating an enterprise or in training. The following initiatives have been undertaken to overcome this major constraint: in Fiji, a trainer who has no business experience was given the opportunity to observe a business enterprise at close quarters. Another successful experience was having prospective trainers run small enterprises as part of the training of trainers program.

Technical Assistance

The lack of technical knowledge has also been identified as one of the major limitations of the informal sector. Technical assistance is most needed in the areas of appropriate technology, legal and financial issues and marketing strategies. Good sources of advice for small businesses in those three areas are not easily available. The following comments and recommendations have been made in this respect:

Technology

As a means of providing technological advice to the informal sector, the following should be undertaken (Pinilla, 1987):

- Projects develop centres with appropriate machinery so that informal business people may become acquainted with available technologies.
- Specific technical assistance must accompany the provision of credit when new machinery is acquired.

Legal and Financial Issues

Technical assistance on legal and financial issues should be provided in such a manner that the recipient acquires the skills needed for the daily management of the business.

Marketing

As mentioned earlier, often women begin their business activities with a very poor idea of the market for their products. Lack of attention to marketing often results in business failures that could have been avoided if proper market research had been undertaken.

In many countries, marketing consultants who are oriented to small enterprises are hard to find. Most business graduates are rapidly absorbed by the corporate sector.

Resources

Papers Presented During the International Seminar on "Women in Micro- and Small-Scale Enterprise Development", Organized by the Canadian International Development Agency (CIDA), Hull, and the Institute for International Development and Co-operation (IIDC), University of Ottawa, October 26-28, 1987

Awori, Thelma. "Training Issues: Women in Micro- and Small-Scale Enterprises". United Nations Development Fund for Women (UNIFEM). New York, N.Y.

Berger, Marguerite. "Key Issues in Women's Access to and Use of Credit in the Small and Micro-Enterprise Sector". International Center for Research on Women. Washington, D.C.

Carr, Marilyn. "Women, Technology and Small Enterprise Development". Intermediate Technology Development Group Ltd. Rubby, United Kingdom.

Chacon, Isabel. "The Development of Women's Small-Scale Enterprises in Costa Rica: ACORDE's Case". Costa Rica Association for Development Organizations. San José, Costa Rica.

Hannan-Anderson, Carolyn. "SIDA Support to Women in Small-Scale Enterprises Development in Tanzania: Past Experiences and Future Plans". Swedish International Development Authority (SIDA), Dar es Salaam.

Pansini, June J. "Employment and Income Generation: A USAID/WID Perspective". Washington, D.C.

Perera, Lakshmi. "Women in Small-Scale Enterprise Development: Colombo, Sri Lanka".

Pinilla, Susana. "Women in a Peruvian Experience in Support of the Informal Sector". Instituto de Desarrollo del Sector Informal. Lima, Peru.

Suwana-adth, Malee. "Women and Small-Scale Enterprise Development in Asia: The Thailand Experience". SVITA Foundation, Bangkok, Thailand.

Swantz, Marja-Liisa and Aili Mari Tripp. "Women and the Emergence of Micro- and Small-Scale Enterprise in Tanzania: Constraints and Gains for Women in the Informal Sector". Helsinki, Finland.

Tinker, Irene. "The Human Economy of Micro-Entrepreneurs". Equity Policy Center. Chevy Chase, Md.

CIDA. Women in Micro- and Small-Scale Enterprise (MSE) Development". Industrial Services, Canadian International Development Agency, Hull, Quebec.

Other Sources

Crandon, Libbet. Women, Enterprise and Development. The Pathfinder Fund's Women in Development: Projects, Evaluation and Documentation (WID/PED) Program. The Pathfinder Fund, Chestnut Hill, MA. 1984.

Dulansey, Maryanne and Eileen Johnson, "Les femmes et le développement: l'égalité par l'éducation et l'emploi - Guide d'études pratiques (planification de changement)". Washington, D.C.: 1979. 11 p.

Dulansey, Maryanne and James Austin. Small-Scale Enterprise and Women. Harvard Institute for International Development Case Study and Training Project. Agency for International Development. (no date).

Hunt, Robert W. The Evaluation of Small Enterprise Programs and Projects: Issues in Business and Community Development. AID Evaluation Special Study No. 13, U.S. Agency for International Development. June 1983.

Institut d'études des femmes de la Méditerranée (KEGME), Coopératives de femmes en région méditerranéenne, Seminar organized by KEGME, Nov. 13-16, 1986, Athens.

"Moyens et stratégies pour stimuler la création d'entreprises par les femmes". Québec: Ministère de l'Industrie et du Commerce, mai 1985. 9 p.

Otero, Mario. C. der Issues in Small-Scale Enterprise. U.S. Agency for International Development. Washington, D.C. June 1987.

Reichmann, Rebecca. Women's Participation in ADEMI: The Association for the Development of Micro-enterprises, Inc. Santo Domingo, Dominican Republic. ACCION International/AITEC. March 1984.

Sebstad, Jennifer. Struggle and Development Among Self-Employed Women (USAID, Bureau for Science and Technology, March 1982).

Situation de la femme dans les mécanismes de crédit et création d'un système de fonds de garantie pour les femmes: Cas du Congo, du Gabon et de la République Unie du Cameroun, Research Series, United Nations, 1983.

USAID. Evaluation of Small Business Programs and Projects: Issues in Business and Community Development. Washington, D.C., June 1983.

Van der Wees, Catherine and Henny Romijn. Entrepreneurship and Small Enterprise Development for Women in Developing Countries: An Agenda of Unanswered Questions. International Labor Office. Geneva, 1987.